DOGFIGHT

P-51B/C Mustang

Northwest Europe 1943–44

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CHAPTER 1

IN BATTLE

Maj Jim Howard climbs into the cockpit of one of the 354th FG's first P-51B-1s, 43-12175 – this aircraft was subsequently lost on April 8, 1944 while escorting 664 bombers targeting Brunswick. Howard was used to bringing pilots up to speed on new aircraft, for prior to being assigned to command the 356th FS he had served with the 329th FG at Santa Ana, in California, where he familiarized newly winged aviators with the P-38 Lightning. (Author's Collection)

Five miles above the earth, crisp contrails etched the steely blue sky high over Germany – a white arrow pointed directly at the aircraft factories at Oschersleben and Halberstadt. The B-17 Flying Fortresses of the 1st Bomb Division, in close formation, headed in a straight line toward their targets just 65 miles southwest of Berlin. The Eighth Air Force had only resumed penetrating this far into the Third Reich in late December 1943 after suffering disastrous losses during the second Schweinfurt raid on October 14 that same year.

But on this day – January 11, 1944 – the B-17s were not coming alone. Escorting them was a revolutionary fighter that would enable USAAF bombers to range across the entire Third Reich and, in the process, destroy the Luftwaffe's day fighter force: the North American Aviation (NAA) P-51B Mustang.

In January 1944, just one group in the European Theater of Operations (ETO) was equipped with the P-51B – the 354th Fighter Group (FG). At the

time, the Mustang had a 95-mile range advantage over the P-47 Thunderbolt and a 30-mile advantage over the P-38 Lightning, and so the 354th often found itself as the only escort for the bombers during the last few miles to the target – usually the most hotly contested part of the mission.

Leading the 354th FG on the 11th was Maj James Howard, who was an unusual fighter pilot for a number of reasons. Firstly, he was 6ft 2in. tall – three inches over the USAAF's official maximum height for fighter pilots. Secondly, he was 30 years old, making him an "old man" in comparison with his subordinates. Thirdly, he had significant combat experience. Howard had earned his wings of gold with the US Navy in August 1939 and then resigned his commission in June 1941 to join the American Volunteer Group (AVG) in China, where he had been born to missionary parents. Having claimed 2.333 aerial victories in China, Howard entered the US Army Air Forces (USAAF) in early 1943 when the AVG was disbanded. Now the commanding officer (CO) of the 356th Fighter Squadron (FS), he had knocked down a Bf 109 on 20 December during one of the group's early missions.

Maj Howard's gun camera captures the demise of a Bf 110 on January 11, 1944, the *Zerstörer* still clearly carrying launchers for W.Gr. 21 *"Dodel"* air-to-air unguided rockets. The drag-inducing launchers could be jettisoned after the weapons were fired, but this fighter had been engaged northwest of Halberstadt before its pilot had expended his 21cm rockets during an attack on B-17s from the 401st BG. (Author's Collection)

Returning to January 11, 1944, Howard sent one of the three squadrons to cover the front of the bomber stream while he remained with the other squadrons at the rear of the formation. The B-17s made their bomb runs and

turned for home, and 20 minutes later the Luftwaffe struck. Waves of Bf 109s and twin-engined bomber-destroyers went after the lead formations of B-17s, and Howard led his squadron to their defense.

Spotting a Bf 110 below him at the same altitude as the bombers, he dropped his external tanks and dove, pulling up behind the enemy fighter. "I waited until his wingspan filled my gunsight and opened up with a four-second burst," Howard subsequently reported. He sprayed the Bf 110 with 0.50-cal. rounds, scoring hits across the engines, fuselage and cockpit. The Bf 110 veered off course, went into a dive and broke up at 5,000ft.

Howard had lost the rest of his flight in his dive, and found himself alone above the bomber stream. A few minutes later, a Bf 109 flew toward him, and he raked it with machine gun fire, then he spotted an Fw 190 and closed in from astern, opening fire and seeing parts fly off the aeroplane. The pilot jettisoned the canopy and jumped, possibly "in anticipation of something worse," Howard recalled. Noting that the rest of his flight had moved back in the bomber stream, he throttled back to stay with the lead element, noting it "seemed to have more than its share of enemy fighters."

As Howard had fired on the Fw 190, two of his four guns had stopped – ammunition feed jams were a common early problem with the P-51B. Now restricted to only two machine guns, and still looking for Mustangs to join with, he spotted a Bf 109 just underneath and a few hundred yards ahead of him. Upon seeing the Mustang, the Bf 109 pilot chopped his throttle, trying to make Howard overshoot. "It's an old trick," Howard said. He and his nemesis then tried to "out-scissor" each other. "We went into a circle dogfight, and it was a matter of who could maneuver best and cut the shortest circle. I dumped 20 degrees of flap and began cutting inside him, so he quit and went into a dive, with me after him. I got on his tail and got in some long-distance squirts from 300 or 400 yards, but I didn't see him hit the ground."

Maj Jim Howard chats with his crew chief, SSgt M. P. Trice, on the wing root of P-51B-5 43-6315, which bears his full tally of claims following his mission on January 11, 1944 – seven (one flag is obscured to the right) Japanese aircraft with the AVG in 1942 and six German fighters with the 354th FG. Howard was not flying his assigned aircraft, nicknamed *DING HAO!* (Chinese for "Very Good!"), during his Medal of Honor mission. Instead, he was at the controls of 43-6441, coded AJ-X, which was assigned to 1Lt Bart Tenore. (Author's Collection)

Finding himself "on the deck," Howard pulled up and located a P-51B that was itself trying to join up, mistakenly, with a Bf 109. "The '51 saw me coming in from behind and he peeled, off while the ME started a slow circle," said Howard. "Things happen so fast it's hard to remember them in sequence when you get back."

Now down to one gun, Howard climbed back up to the bombers and soon recognized about 20 German fighters setting up an attack on two boxes of B-17s from the 401st Bomb Group (BG). Singling out a Bf 110 on the right side of the formation, Howard dove and fired, his one working gun producing strikes. "I could see gas and smoke coming out, [and] white and black smoke." The *Zerstörer* (destroyer) flipped onto its back and fell into a vertical dive.

Soon, a Bf 109 came in on the bombers' right side. Howard zoomed in close, and the German headed for the deck. Apparently unaware that Howard was following, the pilot's dive was interrupted by 0.50-cal. rounds from the Mustang's one operable gun. "I gave him a squirt and he headed straight down with black smoke pouring out," Howard said. He then climbed again to

defend the bombers, driving more fighters off with feints, bluffs and mock attacks, including one against a persistent Ju 88 that kept trying to climb to attack the bombers. After its third try, the aircraft eventually gave up its pursuit.

Howard then joined up with three stray Mustangs and returned safely to the 354th FG's airfield at Boxted, in Essex, where he claimed two victories, two probables and one damaged. Confirmations from other members of the group changed one of the probables to a victory.

Meanwhile, the 401st BG at Deenethorpe, in Northamptonshire, also corroborated the story. No fewer than 16 debriefing documents described the jaw-dropping antics of the single Mustang that flew over, around and through the bomber formation in their defense. "For sheer determination and guts, it was the greatest exhibition I'd ever seen," said Maj Allison Brooks, who was leading the 401st BG that day. "It was a case of one lone American against what seemed like the entire Luftwaffe. They can't give that boy a big enough reward."

Howard's tally that day made him the 354th FG's first ace, and his relentless defense of the 401st BG earned him the Medal of Honor – the only such decoration bestowed on an Eighth Air Force fighter pilot. When the press was turned loose on him on 13 January – the first time the USAAF admitted the Mustang was in action over Germany – one reporter asked Howard, "Why did you risk your neck doing what you did?" He replied, "I seen my duty and I done it!"

Col Howard wears the Medal of Honor around his neck following an award ceremony in June 1944. Note the AVG "Flying Tiger" emblem on his right pocket. The 6ft 2in. Howard was officially three inches too tall to fly fighters, but his experience as a Naval Aviator and victories with the AVG proved that his height had no bearing on his effectiveness as a pilot. (Author's Collection)

CHAPTER 2
SETTING THE SCENE

By late 1943, the Eighth Air Force was facing an existential problem. The assumption that "the bomber will always get through," as future Prime Minister Stanley Baldwin first asserted in the British Parliament in 1932, stemmed from earlier thinking from the likes of Italian General Giulio Douhet and Russian–American aviation pioneer Alexander Seversky. The US Army Air Corps (USAAC) built its strategy for war around this concept, but put a twist on it. Instead of the mass terror raids advocated by Douhet, it would strike specific military targets by daylight, using advanced bombsight technology and purpose-built heavy bombers with the range and payload to inflict heavy damage deep inside enemy territory.

World War II offered the USAAC (which became the USAAF in March 1942) a chance to prove its theories. In practice, the bombers did get through, but with grave casualties when they flew without fighter escort – something the Royal Air Force (RAF) had experienced earlier in the war. The P-47

Thunderbolt had a combat radius of 275 miles in September 1943. On deep penetration missions into Germany, Luftwaffe fighters would simply wait for the fighter escort to break away for home before pouncing on the bombers.

The Luftwaffe had developed a complex system of layered defense against American bombers, taking advantage of the P-47D's limited endurance in order to commit its powerfully armed *Zerstörer* to combat out of the Thunderbolt's range. The heavy weapons carried by the *Zerstörer* were capable of inflicting terrible losses.

Seeking a knockout blow before attrition rendered the Eighth Air Force unable to mount effective missions, the USAAF launched a two-prong raid on the German aircraft ball-bearing plants at Schweinfurt and Regensburg on 17 August 1943. Weather spoiled the bombers' tactics and left them especially vulnerable to fighter attack. The key to the heavy bombers' ability to defend themselves was mutual protection, and when the bomber stream became strung out, it left openings for the fighters to attack.

Unescorted B-17Fs over Schweinfurt during the first mission to attack the city's ball- bearing plant on August 17, 1943. Despite some German countermeasures failing – note the smoke screen generators at the top of the photograph, foiled by wind that blew the smoke away from the city – flak and fighter defenses shot down 60 bombers. (National Museum of the USAF)

The raid's multiple attack force structure was intended to overwhelm German fighter defenses, but the Regensburg- bound bombers were delayed by ground fog in England. Instead of swamping the defenses, the formations were so spread apart because of the adverse weather that Luftwaffe fighters had time to savage the first group to attack Regensburg, land, re-arm and refuel, and attack the second group with equal ferocity. Of 376 bombers sent to the two targets, 60 failed to return.

Rocked by such losses, the Eighth Air Force paused its deep penetration strikes until 6 September, when 338 B-17s launched an attack on Stuttgart. Again, weather scrambled the formations and made the bombers vulnerable to attack, with 45 being lost to fighter attack, flak or fuel starvation. A return to Schweinfurt on 13 October was even more disastrous, with 77 of the 291 bombers in the attacking force being lost. Between the two Schweinfurt raids,

1,219 American airmen had been killed or captured – and these were just two of many missions being flown at the time.

No matter how effective the raids were at damaging their targets (and they could be effective, with "second Schweinfurt" causing ball-bearing production to be halted for six weeks), the pyrrhic victories were draining the Eighth Air Force of men and machines. It could not survive with this loss rate. Deep-penetration raids were suspended after the 13 October mission.

The Opposition

Still the Luftwaffe's most numerous fighter in early 1944, the Bf 109 was a versatile airframe adapted to accommodate an assortment of roles in the war against the American *viermoten* (a contraction of "four-engines"). Powered by the DB 605 engine and equipped with several power-boosting systems to squeeze more performance from the Daimler-Benz engine, the Bf 109G in its various guises was the USAAF's most common foe in 1943–44.

This was a fighter designed for high altitude, with the G-1, G-3, and G-5 series machines even boasting a pressurized cockpit. Its intended targets were evident by some additional new features introduced in the "Gustav," namely an armored windscreen, a new combination glass/ armor fixed plate behind the pilot's head and additional cockpit armor. These were aircraft designed to tangle with bombers above 25,000ft.

The versatile "Gustav" could be modified with the use of various *Rüstsätze* (field modification sets) to supplement their standard armament of two MG 17 7.92mm machine guns (replaced by MG 131 13mm machine guns in the Bf 109G-6) mounted atop the cowling and an MG 151/20E 20mm cannon firing through the propeller spinner. These *Rüstsätze* included the R5 and R6 modifications, which mounted MG 151/15 15mm or MG 151/20E 20mm cannon in gondolas beneath the outer wing panels. The Bf 109G-6/R2 had launchers for two 21cm *Werfer-Granate* (W.Gr.) 21 *"Dodel"* ("idiot") air-to-air rockets, and the Bf 109G-6/U4 was a factory conversion that fired MK 108 30mm cannon from below the wings.

These weapons packed a fearsome punch when the Bf 109s could bring them to bear on the bombers, but they also imposed significant performance penalties on the *"Kanonenbooten"* ("gunboats"), as they were nicknamed),

dragging their top speed down from the official 395mph to a more pedestrian 340–350mph and significantly hampering maneuvrability.

The Bf 109's high-altitude performance was better than that of its stablemate, the Fw 190, so its value was most often found in escorting the latter type and other aircraft armed with "bomber destroyer" heavy weaponry.

The Fw 190 provided the Luftwaffe with a second effective fighter for the defense of the Reich in 1943–44. Powered by a BMW 801C radial engine, the Fw 190 featured a wider track landing gear than that fitted to the older Bf 109, thus making it far easier to land – a key strength for an air force manned increasingly by inexperienced pilots. That said, the Fw 190 was also asked to do many things in response to the growing USAAF daylight bombing campaign, some of which it was poorly suited to.

By January 1944, American flyers were engaging the Fw 190A-4, A-5, A-6, and A-7. The A-8 with methanol-water boost began production a month later. The Fw 190 had an armament edge over the Bf 109, with two MG 17 7.92mm machine guns firing through the propeller and a 20mm MG FF and 20mm MG 151/20E cannon in each wing in the Fw 190A-5, although this armament could vary even among variants, based on the *Rüstsätze* applied to individual aircraft.

The A-6 was specifically designed to contend with Allied bombers, with four MG 151/20Es and two MG 17s, along with armor plating all around the canopy and the FuG 16ZE radio system for navigation. Additional modification kits provided 30mm armored glass plates for the windscreen and canopy. The Fw 190A-7 added two more MG 151/20Es to the wings and more powerful MG 131 13mm machine guns atop the nose. The A-8 was based on the A-5, and introduced the blown "Galland hood" and wooden VDM paddle- blade propeller.

An Fw 190 pulls away from a head-on pass at a straggling B-17F during a mission to Münster in 1943. This was often the fate that awaited bombers damaged by flak or fighters beyond the range of Allied escorts. Deprived of the protection of the massed guns of the bomber formation, stragglers were easy targets for Luftwaffe fighters. (National Museum of the USAF)

Variants of the Bf 109G-6 operated in different roles against the American bomber streams, acting as bomber destroyers or as escorts depending on the armament. Here, Luftwaffe groundcrew manhandle a Bf 109G-6/R6 *"Kanonenbooten"* equipped with the *Rüstsatz VI* underwing gondola housing MG 151/20E 20mm cannon. Assigned to 5./JG 2, this aircraft was lost in action on October 20, 1943. (Tony Holmes Collection)

To give the Fw 190 even more firepower, there were several *Rüstsätze* for field installation and *Umrüst-Bausätze* (modification construction sets) installed at the factory. Examples included the Fw 190A-6/R1, which was employed by the dedicated *Sturmböcke* ("battering ram") units of *Jagdgeschwader* (JG) 300 and JG 301, and JG 3's *Sturmböcke Gruppe*. These were heavily armed aircraft intended to press attacks on the bomber streams to a very close distance – gun camera film often showed aircraft breaking off at less than 100ft from the target.

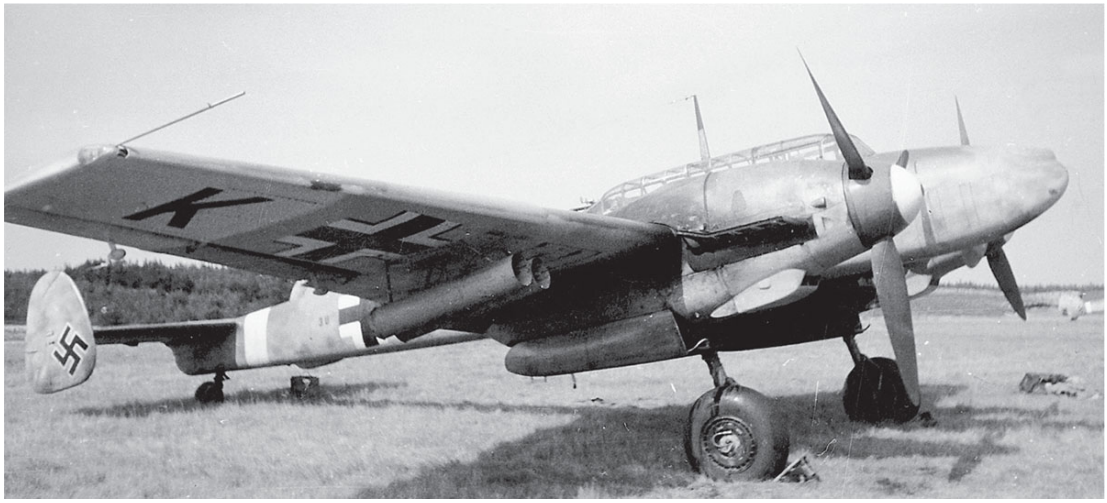
The wing of the A-6/R1 was re-engineered to handle larger weaponry, with the modification having one MG 151/20E from each wing replaced by two pod-mounted cannon beneath the wings. The A-6/R2 traded the 20mm cannon for MK 108 30mm cannon. Rockets were the main armament of the A-6/R6, with a single W.Gr. 21 rocket tube carried under each outer wing panel. The A-7/R2/R6 had the rocket tubes, plus its MG 151/20E replaced with MK 108 cannon.

A standard Fw 190A-8 had a maximum speed of 408mph. However, as was the case with the Bf 109, these additional armaments added weight and drag that seriously degraded the performance of the Fw 190s optimized as dedicated bomber destroyers.

By early 1944, the Luftwaffe harbored few illusions about the survivability of the Bf 110 when engaged by modern Allied fighters. In August 1943, the remnants of the *Zerstörer*-equipped units that had battled the Soviets were recalled to Germany to form *Zerstörergeschwader* (ZG) 26 at Wunstorf and ZG 76 at Ansbach to fly in defense of the Reich. Their aircraft were Bf 110G-2s, which featured slightly revised vertical tail fins, twin 7.92mm guns instead of one for the *bordfünker* (radioman) sat in the rear cockpit, and an assortment of improvised forward-firing weaponry. The latter ran the gamut from 20mm and 30mm cannon, 37mm FlaK 18 guns, and W.Gr. 21 rockets.

The role of the *Zerstörergeschwader* was that of *Pulk-Zestöreren* ("formation destroyers"), and if they were allowed to get in range of the bombers, they could wreak havoc – not just through downing B-17 Flying Fortresses and B-24 Liberators with their rockets or other weapons, but by dispersing the formations and making them more vulnerable to attacks by single- engined fighters. On occasion, nightfighter- configured Bf 110Gs were also pressed into service against the USAAF's daylight raids.

The Fw 190 did not have the high-altitude performance of the Bf 109G, so it was often used as a committed bomber destroyer. The Fw 190A-7 seen here was the first example of the Focke-Wulf fighter to be fitted with two MG 131 13mm machine guns in the upper forward fuselage ahead of the windscreen. The A-7 also featured four wing-mounted MG 151/20E cannon, as introduced by the Fw 190A-6. (Tony Holmes Collection)



The Bf 110G was the mainstay of the *Zerstörergruppen* in 1943–44 during the Defense of the Reich campaign. Here, a Bf 110G from III./ZG 26 awaits the reloading of its four W.Gr. 21cm mortar tubes. While lethal against bombers when unopposed, the Bf 110 was exceptionally vulnerable to Allied fighters. When the P-51B/C arrived, with its ability to range across most of Europe, the Bf 110's days as a day fighter were soon over. (EN Archive)

The Bf 110G had a respectable top speed of 349 mph in a clean configuration, but this was considerably reduced when multiple rocket tubes were hung under the wings. Heavy losses dictated that the Bf 110Gs' area of operations was reduced every time the USAAF introduced a range- extending measure for the P-47. American fighter pilots referred to them as "easy meat," and once the Mustangs arrived in combat, there were few places the Bf 110 could operate safely.

Like some of the Bf 110s faced by the Eighth Air Force, a number of nightfighter-configured Do 217N-2s were also pressed into daylight action in 1944 just as the type was fading from nocturnal service in favor of newer and better aircraft. The Do 217N-2 had a withering battery of four MG 150/20Es and four MG 17s fixed to fire forward, as well as the option to carry W.Gr. 21 rockets beneath the wings. The Do 217N-2 could also be used to climb above the bombers and drop 551lb bombs fused to explode in the midst of the tightly packed USAAF formations. The Ju 88 was used in a similar way, with indifferent results – it proved difficult for crews to gauge distances, making it hard to deliver a bomb from the correct height in order to detonate it at the American bombers' altitude.

With a maximum speed of 264mph, the Do 217 was extremely vulnerable if left on its own. The fact that the heavily built aircraft could not maintain altitude on one engine meant that any damage inflicted on a powerplant would eventually prove fatal.

The versatile Ju 88 was also periodically drawn from nightfighter as well as bomber units to battle the American "heavies." With a top speed close to 360mph, the Ju 88 was a capable aircraft, but it was used in the same manner as the Bf 110 and Do 217 – as a rocket- launching platform. The parameters of a successful launch meant the machines had to attack from head-on or maneuver behind the bomber formations, limiting their opportunities to strike and exposing them to attack from Allied fighters. Thankfully for the crews of theJu 88s, their value in other roles (primarily as fighters against RAF night raids) meant their presence in daylight skies was limited.

Armorers heave a 21cm mortar shell into the outer launch tube of a pair fitted to the underside port wing of a Bf 110 from II./ZG 76. The shell weighed 112kg, so a "battery" of four such mortars added considerable weight to a Bf 110 or Me 410, greatly affecting speed and maneuverability in types that were already outclassed in the air by Allied escort fighters. These unguided weapons were modified from the Nebelwerfer infantry barrage weapon and had a 100ft blast radius, making them very hazardous for massed bomber formations, but they were difficult to aim. (EN Archive)

Pristine Me 410B-1/U4s of 5./ZG 26 gathered at Königsberg Neumark in the spring of 1944. The aircraft are fitted with long-barrelled Rheinmetall Bordkanone BK 5 50mm cannon, a weapon adapted from a tank gun. The Me 410 also boasted two MG 151/20E 20mm cannon in the nose. Although potentially a formidable bomber destroyer, the Me 410 proved very vulnerable to USAAF long-range fighter escorts. ZG 26 was badly mauled by Mustangs in May, June, and July 1944, forcing it to convert to the Fw 190A-8 in *Sturm* configuration. (EN Archive)

The final twin-engined type encountered by P-51B/C pilots in 1943–44 was the Me 410, which had started to reach frontline units in February 1943. A development of the flawed Me 210, the aircraft was well- armed, with two MG 151/20E cannon and two MG 17 machine guns installed in the nose and a pair of remote-controlled barbettes with MG 131 13mm machine guns firing to the rear as standard equipment. In the *Zerstörer* role, the Me 410B/U1 added two more MG 151/20Es in the belly firing forward, and the Me 410B/U2/R2 had two 30mm MK 108 cannon installed in the bomb-bay. The Me 410B/U2/R5 stuffed the bomb- bay with four MG 151/20Es, giving the aircraft six forward-firing 20mm cannon. The variant with the biggest punch was in the Me 410B-2/U4, which had two MK 103s and an enormous 50mm BK 5 cannon squeezed into the bomb-bay.

Even a conventionally armed Me 410 meant trouble for a bomber, and they were considered a success by the Luftwaffe. Unfortunately for their crews, they

were also well-loved by trigger-happy P-47 and P-51 pilots, resulting in the Me 410 having approximately a one-to-one victory ratio against Allied aircraft.

The Luftwaffe's aerial defense in 1943–44 would be undertaken by three units within its *Jagdgeschwadern* – regular *Gruppen* equipped with Bf 109G fighters, the *Gefechtsverband* ("battle formation") of *Sturmgruppen* Fw 190s covered by two *Begleitgruppen* ("support groups") of light fighters (again usually Bf 109Gs), and the *Zerstörer* units. It was a logical way of using the various fighters at its disposal to their best abilities and, Luftwaffe command hoped, deliver the final blow to the USAAF's daylight bomber offensive.

This structure was put in place just as the Eighth Air Force introduced two things that would blow it apart – a new fighting philosophy, and the P-51B Mustang.

The critical need for the Mustang and its long range was such that it was introduced into combat with almost no familiarization for its pilots. For the first fighter group to fly it, the 354th FG, the Mustang was all but sprung on it by surprise. For veteran groups, the transition to the P-51B from the P-47D was expected to be made with no interruption of mission. It is a testament to the pilots and maintenance personnel of the Eighth Air Force that the new aircraft entered combat and began delivering results almost immediately.

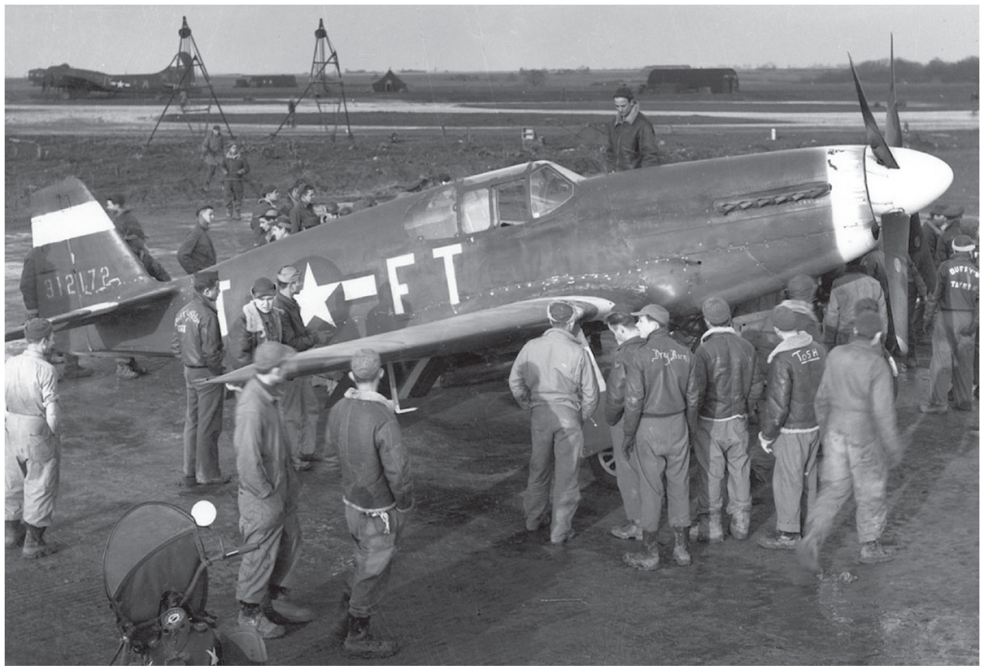
In late October 1943, the men of the 354th FG embarked on the liner HMS *Athlone Castle* for the trip to Britain. The group had trained in California with the P-39 Airacobra, but almost immediately after arriving in England, three pilots – Lts Kelly Gross, Bob Stephens, and Jack Bradley – were ordered to a RAF airfield to learn to fly a new fighter. It was the Allison-engined Mustang I, examples of which had been in service with the RAF for more than a year. They were to familiarize themselves with the aircraft in order to train the rest of the group's pilots about the fighter.

Ironically, when the three returned to the 354th's Boxted base, they discovered that a number of pilots from the group had already flown the Allison-engined Mustang (in F-6A form) in their absence thanks to a 'loaner' from the 67th Tactical Reconnaissance Group. A few days later, the group received five P-51B-1s – the first hint that the 354th would be responsible for introducing the Merlin-powered Mustang to combat, working out the aircraft's remaining bugs in the process.

After a month of familiarization, including long flights over England, gunnery training for the pilots, and on-the-job training for the groundcrews, the group's first mission was set for December 1, 1944.

Although the 354th FG was assigned to the Ninth Air Force, it followed Eighth Air Force policy by having an experienced squadron commander lead its first missions – in this case, Lt Col Don Blakeslee of the 4th FG. Blakeslee, who would be named as the new CO of the 4th FG on January 1, 1944, was already an ace, and his antipathy for his group's current mount, the P-47, is legendary. The mission on December 1 (a sweep along the coast over Knocke, Saint-Omer, and Calais) was uneventful, except for plentiful flak, a fragment of which holed one Mustang. Blakeslee's recommendation following this operation was that the group practice more formation and instrument flying.

He was again in the lead on December 5 when the group undertook a penetration support mission to Paris in poor weather. Five days later, Blakeslee borrowed one of the Mustangs and flew it to his group's base at Debden, also in Essex, where his pilots ogled the new fighter and Blakeslee sang its praises. The 4th FG would soon put the Mustang to lethal use itself.



P-51B-1 43-12172, the assigned aircraft of 1Lt Richard Klein of the 353rd FS/354th FG, pays a visit to the 401st BG's base at Deenethorpe, in Northamptonshire, on December 27, 1943 to enable bomber crews to familiarize themselves with the Mustang. Klein was forced to bail out of another aircraft over the North Sea on February 3, 1944 when its engine froze up due to a leaking oil line. He was rescued by a German naval vessel and taken prisoner. (USAAF)

1Lt Charles "Chuck" Gumm scored the 354th FG's first victory and subsequently became the first Merlin Mustang ace, downing six German aircraft by February 25, 1944. On a routine training sortie over Norfolk on March 1, Gumm's engine began to run rough. Instead of bailing out, he tried to return to Boxted airfield, only for the Merlin to quit within sight of the runway. Gumm just managed to clear a row of houses in the village of Nayland, on the Suffolk/Essex border, before his fighter (P-51B-1 42-106749) clipped a nearby tree and crashed. He was killed instantly. (USAAF)

Col Don Blakeslee (left), CO of the 4th FG, was an ardent advocate for the Mustang, and he assured the commander of VIII Fighter Command, Maj Gen William Kepner (right), that his group could fly its first mission within 24 hours of re-equipping. True to his word, the 4th undertook its first Mustang mission on February 28, 1944. (National Museum of the USAF)

On December 11, the 354th FG penetrated German airspace for the first time, with Blakeslee flying wing for 354th FG CO Col Kenneth Martin. Forty-eight hours later, the group was on its own, and it saw action for the first time. The bombers' target that day was the port of Kiel, and on the way home 1Lt Glenn Eagleston of the 353rd FS shot up a Bf 110, killing the *bordfünker* and setting one engine on fire. The *Zerstörer* could only be scored as a probable, however, as Eagleston's guns jammed on his last pass before the stricken Messerschmitt disappeared into the overcast.

Jammed guns were but one bug the 354th FG identified during its initial operations with the Mustang. The early P-51Bs also suffered fuel feed failures, boost problems, fluid leaks, and electrical issues, which the groundcrews hustled to find fixes for.

On December 16, the P-51B scored its first victory in USAAF hands when 1Lt Chuck Gumm of the 355th FS destroyed a Bf 109 after it attacked a crippled B-17 near Bremen. The Mustang's impact was finally felt in a major way four days later when, during another raid on port facilities at Bremen and Wilhelmshaven, the group destroyed six enemy aircraft. The victors included 1Lts Jack Bradley, Jim Parsons and Tom Varney, Majs James Howard and

George Bickell, and Lt Col Blakeslee, who came along once again as a flying tutor.

The 354th found itself covering the crucial final few miles to the target, and as a result the group was in on the "hottest" part of the missions in terms of aerial action through to year-end and into January 1944. On 31 December the group downed two German fighters, followed by a Ju 88 on 4 January. On the 5th, the 354th claimed no fewer than 15 victories over Kiel, and on January 11 – the day of Maj Jim Howard's "One-Man Air Force" performance chronicled in chapter one – the group downed 16. A single Bf 109 fell to the group on January 14, with another Fw 190 destroyed ten days later. Four more German aircraft were claimed on 29 January, and the following day the group knocked down six fighters. In just two months with the new fighter, the "Pioneer Mustang Group" (as the 354th dubbed itself) claimed 53 victories.

The 354th's special role with its then unique mounts exacted a heavy toll on the group, however, with 13 Mustangs being lost either in combat or during training in December–January. The arrival of two new Mustang groups came not a moment too soon, with Blakeslee's 4th FG converting to P-51Bs in February, and the new Mustang-equipped 357th and 363rd FGs being declared operational with the aircraft in-theater that same month. Four more groups (the 339th, 352nd, 355th, and 359th) would convert to the P-51B/C in April 1944, followed by the 361st in May. All the new Mustang groups were assigned to the Eighth Air Force's VIII Fighter Command. The 354th remained in the Ninth Air Force, but was under operational control of the Eighth.

P-47 versus the P-51B

The P-47 Thunderbolt had played a key role in the war of attrition waged against the Luftwaffe, but its limited range meant that industrial sites producing major components for the German war machine were beyond the range of fighter escort. Until August 1943, the Thunderbolt had a range of just 230 miles using a 75-gallon belly tank – an improvement over its initial 125-mile range on internal fuel alone. By September, the locally sourced 108-gallon pressed paper tanks stretched the range to 275 miles when one was used,

allowing P-47s to escort bombers just beyond Paris. With two such tanks, Thunderbolts could cover 350 miles, which meant they could travel to Bremen and back.

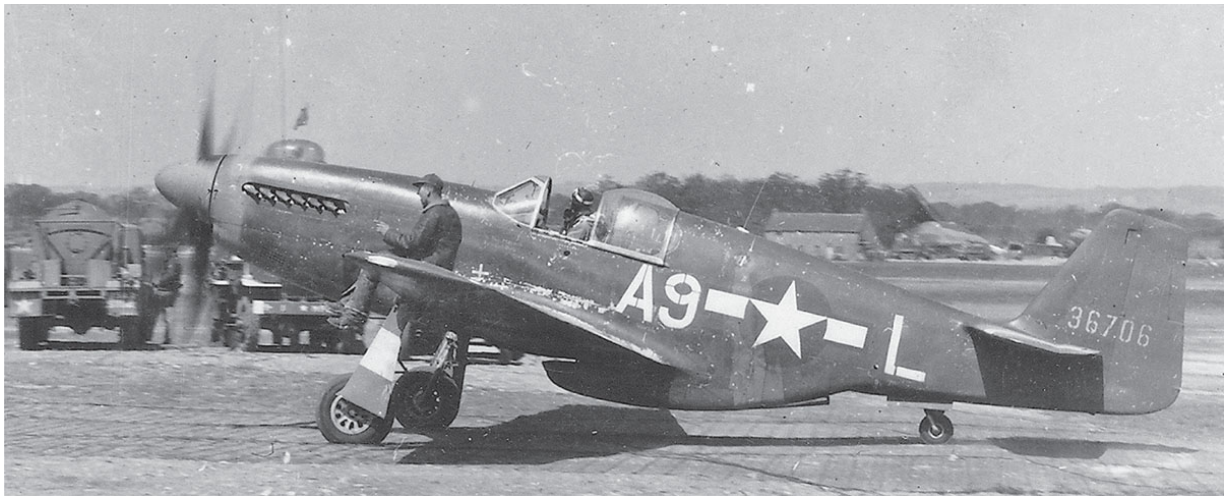
The Thunderbolt could accommodate 305 gallons of fuel internally, while the P-51B-1 carried only 184. That changed for the latter fighter with the addition of the fuselage tank, which brought the Mustang's internal capacity to 269 gallons. And with two 108-gallon tanks under the wings, the Mustang could fly 750 miles – twice the distance of the Thunderbolt, putting Berlin well within range and letting Mustangs travel from England all the way to Vienna and back.

The fuselage tank introduced its own challenges for pilots, however. It had to be used first because a loaded tank caused severe center-of-gravity issues that could prove fatal during hard maneuvers. Despite this drawback, it enabled the Mustang to stay with Eighth Air Force bombers all the way to the target and back. P-51B-1 and B-5 aircraft were retrofitted with the fuselage tanks at aviation depots in Britain, becoming P-51B-7s in the process. Tank-equipped Mustangs were identified by a small white cross (later, a black cross on aircraft in natural metal finish) painted below the aircraft identification block beneath the windscreen.

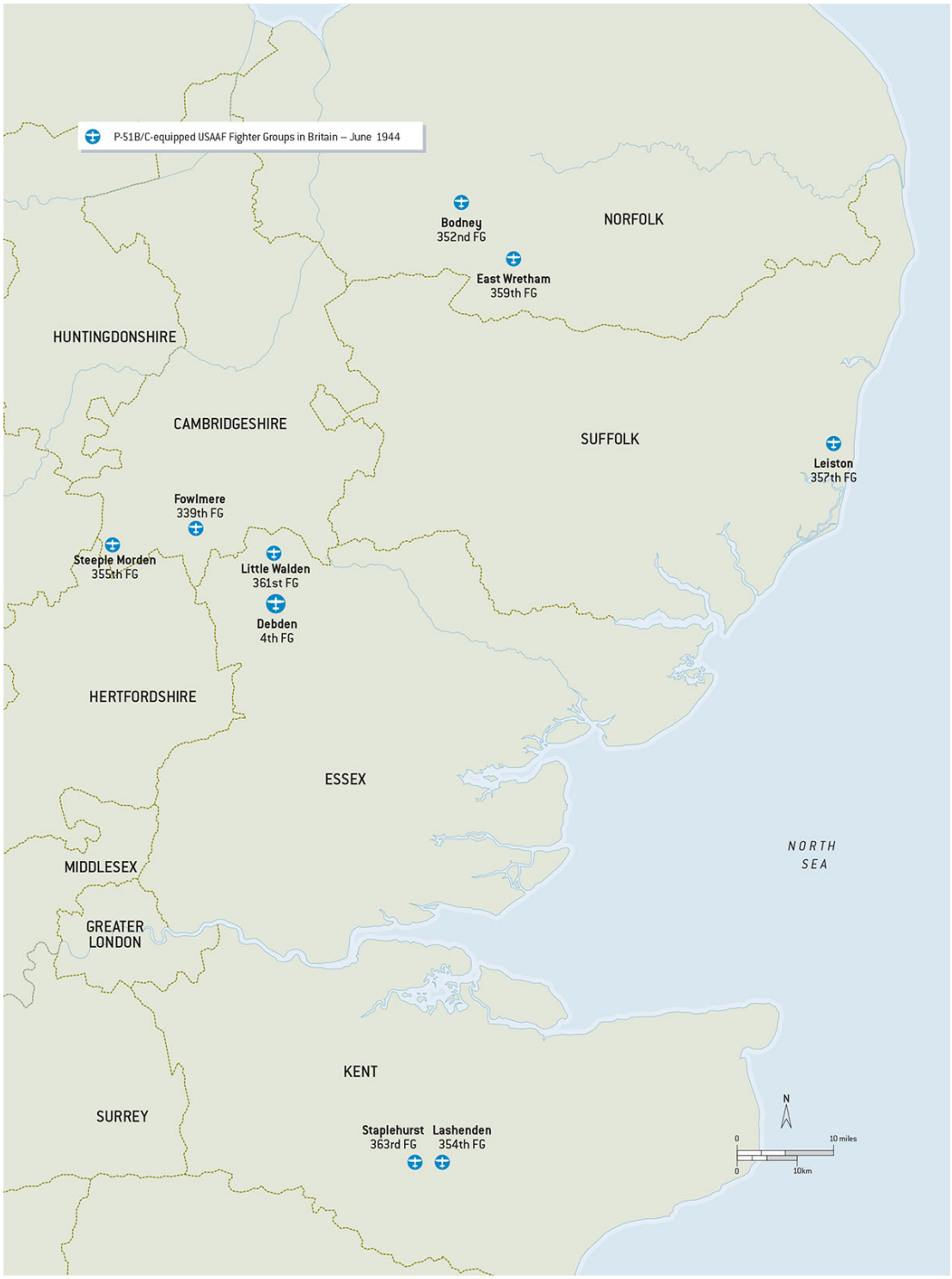
The Thunderbolt had a firepower advantage over the P-51B, its eight 0.50-cal. machine guns being loaded with a maximum of 475 rounds each (although 200 was more common for weight reasons when flying long- range escort missions). While the 'wallop' provided by eight Browning M2s proved very useful in ground attack missions, it was not uncommon for Thunderbolts escorting bombers to fly with two or even four guns removed or unloaded in order to increase the fighters' range. The B-model Mustang had four 0.50-cal. weapons, with 250 rounds for the inboard guns and 350 rounds for the outboard M2s, meaning that in practice the P-51B on escort missions typically had the same amount of ammunition as the Thunderbolt in bomber escort configuration with guns removed and a reduced number of rounds.

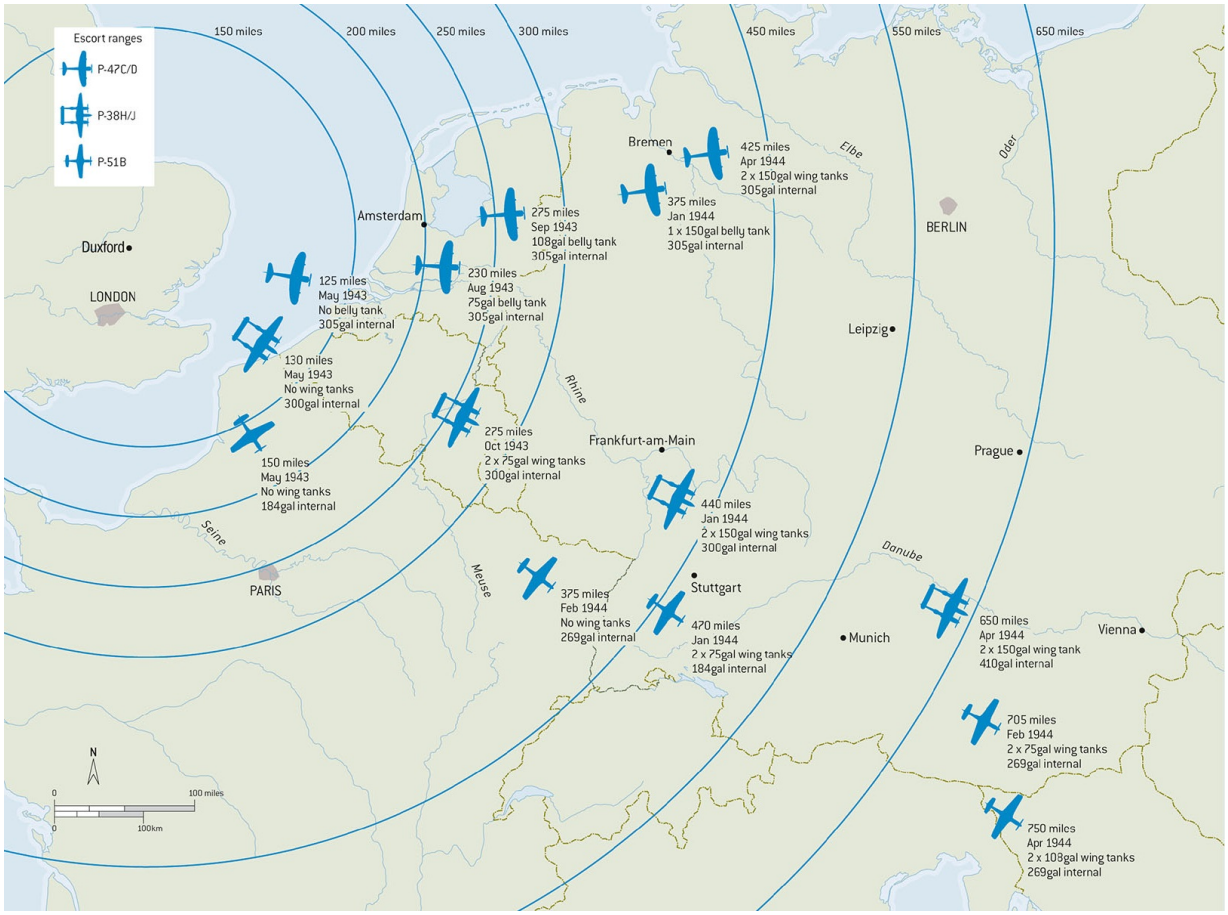
The Mustang also had advantages over the P-47 both in respect to its rate of climb and maneuverability, making the aircraft the preference of most VIII Fighter Command pilots. When Lt Col Don Blakeslee returned to the 4th FG at Debden from his missions with the 354th, he immediately started pressing

for the P-51B, and the group duly converted to Mustangs in February 1944. The 357th entered combat with the P-51B that same month. In April the 352nd, 355th, and 359th FGs traded their Thunderbolts for Mustangs, while the 339th made its combat debut with the P-51B at the very end of that month. The P-47-equipped 361st FG also converted to the Mustang in May 1944, giving the Eighth Air Force control over nine Mustang-equipped groups by D-Day.



At the very end of "Big Week," the 363rd FG at Rivenhall, in Essex, was declared operational as the second P-51B unit in the Ninth Air Force. This aircraft, P-51B-5 43-6706, flew with the 380th FS until it was destroyed in a landing accident at Montreuil (A-38), in France, on September 17, 1944. Note the small white cross on the fuselage just behind the groundcrewman, denoting that the aircraft was fitted with an 85-gallon fuselage tank. (Author's Collection)


P-51B/C-equipped USAAF Fighter Groups in Britain – June 1944
Bodney
352nd FG
East Wretham
359th FG
NORFOLK
HUNTINGDONSHIRE
CAMBRIDGESHIRE
SUFFOLK
Leiston
357th FG
Fowlmere
339th FG
Steeple Morden
355th FG
Little Walden
361st FG
Debden
4th FG
HERTFORDSHIRE
ESSEX
NORTH SEA
MIDDLESEX
GREATER LONDON
KENT
SURREY
Staplehurst
363rd FG
Lashenden
354th FG
N
0
10 miles
0
10km


Escort ranges
P-47C/D
P-38H/J
P-51B
150 miles
200 miles
250 miles
300 miles
450 miles
550 miles
650 miles
Bremen
425 miles
Apr 1944
2 x 150gal wing tanks
305gal internal
375 miles
Jan 1944
1 x 150gal belly tank
305gal internal
Elbe
Oder
BERLIN
Amsterdam
275 miles
Sep 1943
108gal belly tank
305gal internal
Duxford
LONDON
230 miles
Aug 1943
75gal belly tank
305gal internal
125 miles
May 1943
No belly tank
305gal internal
Leipzig
130 miles
May 1943
No wing tanks
300gal internal
Rhine
275 miles
Oct 1943
2 x 75gal wing tanks
300gal internal
Frankfurt-am-Main
Prague
150 miles
May 1943
No wing tanks
184gal internal
440 miles
Jan 1944
2 x 150gal wing tanks
300gal internal
Seine
Danube
Meuse
PARIS
375 miles
Feb 1944
No wing tanks
269gal internal
Stuttgart
470 miles
Jan 1944
2 x 75gal wing tanks
184gal internal
Munich
650 miles
Apr 1944
2 x 150gal wing tank
410gal internal
Vienna
705 miles
Feb 1944
2 x 75gal wing tanks
269gal internal
750 miles
Apr 1944
2 x 108gal wing tanks
269gal internal
N
0
100 miles
0
100km

Maj Jack Price, CO of the 78th FG's 84th FS, prepares to lead his section of Thunderbolts aloft from Duxford airfield, in Cambridgeshire, in February 1944. All of these P-47D-2s are equipped with locally-made 108-gallon impregnated paper centerline tanks. Even with the addition of the latter, the Thunderbolt's maximum range was still 100 miles less than the P-51B/C on internal fuel only. (USAAF)

CHAPTER 3
PATH TO COMBAT

In the winter of 1943–44, there were two kinds of Mustang pilots – those new to the P-51B and those new to fighter combat in general. The 354th and 357th FGs arrived as Mustang units and gained their baptisms of fire in the new aircraft. Other veteran groups like the 4th and 352nd FGs had flown the Thunderbolt, and their pilots transferred the lessons they had learned with the Republic fighter to their use of the P-51B. In both cases, the Merlin Mustangs did what any great fighter does: it turned good pilots into great pilots, and it turned great pilots into aces.

Clayton Kelly Gross was one of the newcomers to combat lucky enough to have the Mustang as their first mount. Growing up in Walla Walla, Washington, Gross said he was like many boys of his era, building balsa wood models of aircraft and dreaming of flying. He had an unusual connection to the military: his uncle commanded the 161st Infantry Regiment of the Washington National Guard. Gross joined the Civil Military Training program

in 1936 when he was 15, and at 17, at his uncle's urging, he joined the guard, serving in a battalion headquarters for three years. At the same time, as a high-schooler, Gross amassed 80 hours in a Waco UPF-7 biplane.

Recognizing that war was on its way, and with his National Guard enlistment coming to an end, Gross took the USAAC and US Navy tests when the recruiters visited nearby Spokane, Washington. He passed both, and was given his choice of services. Gross reasoned that a USAAC pilot would know where his field was at the end of his return flight, but "in the Navy, when you take off on a mission, you don't know if your landing field is going to be there when you get back."

The USAAC placed him on a waiting list for training, much to his uncle's chagrin – he had hoped Gross would re-enlist in the guard. Gross's former unit was soon activated and went on to see combat on Guadalcanal and New Georgia, in the Solomon Islands, and on Luzon, in the Philippines.

"I would have been an infantryman," Gross said. Instead, he was in the first class of student pilots to graduate after the Japanese attack on Pearl Harbor on December 7, 1941. He had attended primary training at Randolph Field, in Texas, and basic training at Kelly Field, also in Texas. At his graduation, along with his wings, Gross received a set of instructions stating "If you are 5ft 11in. or taller, you may not request fighters." Gross, who stood exactly 5ft 11in., made the request just the same, and was one of just two in a class of 156 to be sent for fighter training. No mention of his height was ever made again.

Amongst the initial cadre of pilots assigned to the 354th FG's 355th FS upon its formation in November 1942, Gross had by then survived advanced training in California, Oregon, and Nevada on the P-39 Airacobra, which the group expected to take into combat against the Japanese in the Southwest Pacific. To the pilots' surprise, on October 4, 1943, the group was alerted for deployment, and the very next day it was on a train *east*, not west, to Camp Kilmer, New Jersey. On October 20 personnel from 354th FG boarded the transport HMS *Athlone Castle*, which subsequently deposited the group in Liverpool on November 1 following an uneventful Atlantic crossing.

Gross, who had survived a run-in aboard ship with a dog taught by the enlisted men to be aggressive to officers, was rewarded with a choice assignment. While the rest of the group readied their base at Boxted, Gross

and two other pilots were sent to an airfield near London to check out the Mustang I. It was his first look at the fighter, and Gross later recalled that he found the aircraft "absolutely gorgeous."

Lessons learned in early training flights with the Mustang were soon supplemented by operational experience, the 354th flying its first mission on December 1, 1943. The group found itself covering bombers on their runs into and out of the target area – often the most hotly contested segment of the mission – thanks to the P-51B's unmatched range. Gross participated in many of these early operations, but tallied no victories through December and January.

P-51B-1 43-12451 of the Boxted-based 355th FS/354th FG has a 75-gallon drop tank affixed to its starboard wing. Initially flown by 1Lt Gil Talbot, this aircraft was passed on to 1Lt Clayton Gross in March 1944. He would use the fighter to claim four Bf 109s destroyed and two damaged between April 13 and June 14. (Tony Holmes Collection)

On one such mission, Gross was returning from deep in France with his section leader, Capt Bob Stevens. He was at the controls of his assigned P-51B-1, which had yet to receive nose art. "We were flying in a spread mutual support formation when Stevens, obviously feeling feisty, suggested, 'You stay here. I'm going to drop back and get above you and get up in the sun. Maybe you'll get bounced and we'll get some action.' I said, 'What the hell do you think I am? Live bait?' And he said, 'yeah!' When I got back, I told 'Smitty' (Sgt C. E. Smith), my crew chief, 'Paint *"Live Bait"* on this airplane!'"

On February 8, 1944, Gross and 2Lt Tony Rodojits launched as spares on a mission to Frankfurt, but two aborts resulted in them both joining up as part of the 355th FS's Green Flight. Opposition was absent until the American aircraft were on their way home. At around 1240 hrs, near Valenciennes, in northern France, Green Flight spotted a Bf 109 below them attheir "three o'clock," and the four fighters raced after the lone Messerschmitt, each hoping for a victory. The Bf 109 ducked into low cloud, but it emerged soon after and the Mustangs tore off after the enemy fighter. Again, it disappeared into the low cloud, only to pop out moments later.

1Lt Clayton Gross had 43-12451's crew chief, SSgt C. E. Smith, apply the name *LIVE BAIT* to the port side of his P-51B. It retained the name *"Peggy"* on the opposite side, which Smith had added in honor of his wife when the fighter was flown by 1Lt G. F. Talbot. Gross is seen here posing for the camera outfitted in his "Mae West" life vest and flying coveralls, beneath which he is wearing his leather A-2 jacket and the fighter pilot's requisite silk scarf. (USAAF)

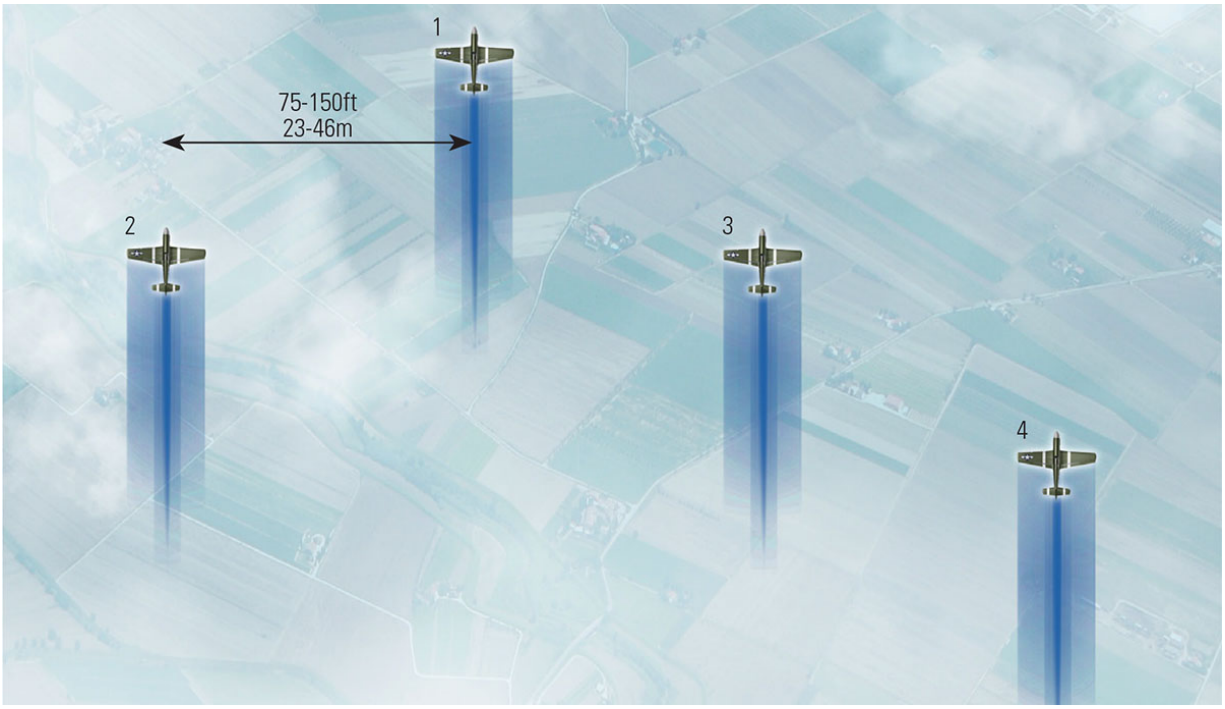
Fixated by the lone Bf 109, the flight failed to see the Fw 190s of the third *staffel* of I./JG 26, led by Oberfeldwebel Alfred Heckmann. Gross saw four Fw 190s diving on the two lead Mustangs, which attempted to break into the attack. "I screamed at Jim [Dalglish] 'Break left!', which he immediately did," said Gross. "It was too late for Jack [Turk], however." Gross saw cannon strikes

on Turk's Mustang, which rolled over and fell into a dive, trailing smoke. "The Fw 190s turned tightly following Jim, and I was turning to fall in behind them. I hollered at Tony, 'Stick with me!' No answer. I spun my head around to check and found no Tony, but four more Fw 190s sitting on my tail with cannon firing!"

Gross continued his turn into a dive straight down and through the undercast, before setting course for home "on the deck." 2Lts Jack B. Turk and Tony T. Radojits were both shot down, with the former losing his life and Radojits becoming a PoW. The Mustangs represented Heckmann's 61st victory and the 17th for Oberfeldwebel Erich Scheyda. They were also the first P-51s credited to JG 26.

As Gross headed home at high speed and low altitude, he stumbled across a train, which he shot up, and then screamed over a German fighter base below six Bf 109s that were in the landing pattern circling above him. Hugging the deck, he came over a rise and saw high tension lines – too late to avoid them. With a flash, *LIVE BAIT* flew through the lines, losing six inches off the left wing tip, cracking the bulletproof windscreen and leaving the engine with a concerning vibration. The fighter staggered, then sped up and regained its attitude.

After reaching the English Channel, the engine quit. Gross, realizing why his Merlin had ceased to function, switched fuel tanks. The engine roared back to life, at which point he realized it was still running at "war emergency" power, and had been for 40 minutes! A placard near the throttle warned that the setting could be used for no more than five minutes. Gross landed safely at Boxted. The next day, representatives from both NAA and Rolls-Royce came to inspect the engine, which showed no signs of having been damaged despite its extended period operating at maximum power.



"FINGER-FOUR" FORMATION

The "finger-four" formation, broadly resembling the fingers of an outstretched hand, was often adopted by P-51 Mustang squadrons to allow control and maximum visibility while undertaking a bomber escort mission. The No. 2 aircraft flew roughly 100ft below and behind the flight leader for optimum maneuverability. The second element flew 100ft behind the flight Leader. The two trailing aircraft (Nos. 2 and 4) would cross below the lead Mustangs (Nos. 1 and 3) on all turns.

On February 22, during an escort to Frankfurt, Gross and the 354th FG faced opposition from waves of Bf 109s, Bf 110s, Fw 190s and Me 410s. "I found a 109 in a hard left turn in front of me," he reported. "I wracked left to follow. I had him – I knew it. I had to pull the nose through a little more to lead him. I was less than 100 yards behind him, anticipation boiling over, and he came apart – exploded! And I had not fired a shot. When I rolled out, I found Glenn Eagleston and I had been nearly air scoop to air scoop. He nailed him before I could fire. At the bar that night 'Eagle' gloated and I sulked."

Gross played the role of frustrated wingman well into March. On March 23rd, the lead pilot in his flight was fixated with chasing, and ultimately downing, a Bf 109 when his wingman, 2Lt Rudy Daudert, was again bounced and killed. It was another costly lesson Gross vowed to learn from.

Groundcrew fit 43-12451 with 75-gallon metal drop tanks for an escort mission in early 1944, prior to the fighter being assigned to 1Lt Gross. Indeed, the aircraft still carries 1Lt G. F. Talbot's name above the mission tally (each operation marked with a bomb silhouette) forward of the cockpit. When fitted with two 75-gallon drop tanks, the P-51B/C had a range of 470 miles. (USAAF)

On April 13, the Eighth Air Force targeted Schweinfurt and Regensburg, losing 60 bombers and their crews in the process. Shortly after the rendezvous, Gross's 355th FS tangled with 30+ Bf 109s near Worms. The squadron claimed three destroyed, and Gross was one of four pilots who put in claims for damaged fighters. Twelve days later, Gross again drew blood, this time against parked aircraft caught on an airfield near Ansbach. He burned two Bf 109s on the ground and damaged a further seven. But air-to-air victories continued to elude him.

On May 11, after a full five months of combat, Gross at last got his chance, and he made the most of it. That day, the 354th FG provided target support to B-17s hitting the railway marshaling yards at Saarbrucken, and north of the target German fighters came up in force. Gross recalled that, because of an earlier sighting of enemy aircraft that opted not to press home their attacks, the group was strung out across much of the length of the bomber formation. He and wingman 2Lt William "Bucky" Harris found themselves alone covering the right side of the bomber stream – which was where 30 Bf 109s were forming up 2,000ft above the bombers, preparing to attack.

The two Mustang pilots began climbing toward the rear of the formation, and they gained attack position without being noticed. Before engaging the Messerschmitts, Gross "checked his six" and saw a second gaggle of 35 Bf 109s. "We held our distance, throttled back a little and let them pass over the top of us," he recalled. "Nobody seemed to notice us" – perhaps the two Mustangs had been mistaken for more Bf 109s. "I couldn't believe what I was seeing! A huge number of enemy aircraft so close we could actually read numbers. When the last plane cleared us, we spread out and climbed the last few feet to their level – no more than 50 yards behind the trailing 109s. I selected a target and opened fire. 'Bucky' did the same."

Gross's target, blanketed with hits, exploded and lazily drifted out of formation into a steep, twisting dive. He then slid over to a second Bf 109, which "fluttered with indecision but stayed in formation," Gross told historian Steve Blake. "He shouldn't have." Gross pressed the trigger button and hits sparkled across the wing root and engine of the Bf 109, which began to burn and slowly rolled into a dive.

Harris had downed a Bf 109, too, and by now the rest of the enemy formation had been alerted to the hostile Mustangs' presence. As the German fighters scattered, the two 355th FS pilots made good their escape before their odds in a 30-to-1 situation ran out.

Heading for home, Gross soon spotted a single Bf 109 about 1,000ft below him flying a reciprocal course. He rolled over, dove and put the nose of the P-51 less than 50ft behind the enemy fighter. Too close to miss, Gross saw hits all over the Messerschmitt. He only stopped firing when the canopy came off,

shortly after which the German pilot peeked out to the left, saw Gross, and bailed out the right side of the fighter.

Gross and Harris, seeing the skies were empty, circled their erstwhile foe floating down beneath his parachute. As Gross passed the vanquished pilot, he waved at him, then pointed at the name on the nose of his Mustang "so he could go home and tell the rest of the Luftwaffe about the 'great ace' who got him. He didn't wave back." Not only had Gross scored his first two official victories, he was awarded the Silver Star for valor for his exploits during this mission.

Danger was never too far away on every one of Gross's 105 combat missions, but the closest call he had came on May 13, 1944. Escorting bombers to Stettin, in Poland, Gross and the rest of the 354th accompanied the bombers when they diverted to attacking targets along the German coast, where B-17-mounted radar could use the variation in reflected energy between water and land to find the approximate location of German cities through cloud cover.

Capt Bob Stephens' P-51B-1 43-12152 *KILLER* undergoes an engine test run at Lashenden, in Kent, in early May 1944. Shortly after this photograph was taken, 1Lt Gross was almost shot down in error by two P-47s while flying *KILLER* on an escort mission to Stettin, in Poland, on May 13. (USAAF)

Gross was north of Rostock on the tail of a Bf 109, "and I would have got him, but before I could see what happened to him, the world exploded around me." A 0.50-cal. round hit the armor directly behind his neck and pushed the metal four inches forward, poking Gross in the back of the head. He looked behind him and saw two red-nosed P-47s bearing down for a second shot at him. "I waved my wings, and the guy pulled off and pulled up beside me." The pilots looked at each other, and one Thunderbolt "driver" put his hands to his head in a mute expression of regret, before he and his wingman peeled away to look for unfriendly targets.

1Lt Gross sits on the wing of 43-12451 on June 17, 1944, three days after he had claimed his fourth victory. Engine trouble had forced him to land the veteran fighter at an Advanced Landing Ground in Normandy, where this photograph was snapped. Below the canopy is the name *"GWENDOLYN"* (Gross's wife) and two more crosses for Bf 109s he had damaged. (Author's Collection)

Meanwhile, with German fighters still in the area, Gross pulled his damaged Mustang (not 43-12451 *LIVE BAIT* but Capt Bob Stephens' P-51B-1 43-12152, nicknamed *KILLER*) up below a B-24 and tucked in under its wing – a case of reversed escort roles – until squadronmate 1Lt Lowell Brueland found him and led him safely back to the group's airfield at Lashenden, in Kent.

On May 28, Gross bagged his third victory – a Bf 109 in the Haldensleben/Calvorde area. The group flew into a swirling dogfight, and Gross was separated from his flight. He gave chase to an Fw 190 but it evaded his attack, and he then nearly collided head-on with another aircraft that he never identified. Throughout it all Gross had not fired his guns.

Then, after joining up with another P-51 for the flight home, he spotted a B-17 with an engine out headed for England on its own – but with a Bf 109 creeping up on it from behind. "I did a rapid wingover and poured on the coals," he said. "When I saw the 109 start firing, I could not wait to close as much as I wanted to. From 200 yards, I opened fire with about a 30-degree

deflection. It worked. My first burst hit his wing root and cockpit area." The Bf 109 made a wingover and then plummeted down until it hit the ground.

The invasion of France saw Gross fly two missions on June 5–6. The first, on the eve of the D-Day landings, was a night escort for glider-towing C-47s, which, the Mustang ace recalled, faced a "wall of fire." The second operation was a patrol along the Normandy coast, which revealed the extent of the invasion fleet. "It was ship, ship, ship, ship," he said. Gross joked to his fellow pilots that if they were knocked down, they could walk back to England without getting their feet wet by going from deck to deck across the channel.

On June 14, Gross scored his fourth aerial victory during an escort for B-26s targeting the area around *Alençon*/Saint-Hilaire-sur-Benaize. "The Luftwaffe put up some opposition, and for a few minutes we had a 'royal donnybrook' ranging from 15,000ft to the deck," Gross explained. "I found a Bf 109 in a climbing turn left and was able to cut him off, closing to 75 to 100 yards before firing. I hit him with my first burst, and his turn became a wingover as he trailed smoke and fire. I followed him long enough to see him go in."

Two weeks later, Gross's tour ended, and he went home to Walla Walla for a 30-day leave. He opted to return to the 354th for a second tour, and on his second mission back, on October 29, 1944, Gross destroyed a Bf 109 to become an ace. This victory was claimed while he was at the controls of a P-51D. By war's end, Gross had flown 400 combat hours over two tours, and his final score stood at six destroyed (five Bf 109s and a Me 262, the latter having been shot down on April 14, 1945 south of Berlin), four damaged, and a share of a probable. Gross flew four P-51Ds and a P-47D during his second tour, all carrying the name *LIVE BAIT* After the war, Gross went to college and became a dentist, settling in Vancouver, Washington. He passed away on January 10, 2016, aged 95.

While Kelly Gross knew nothing but combat in the P-51 Mustang, Johnny Godfrey was part of the other group of Mustang pilots who came to the new aircraft with experience in other fighters.

Born to British parents in Montreal, Canada, Godfrey's family moved to the United States in 1923 when he was a year old. Settling in the mill town of Woonsocket, Rhode Island, the gregarious Godfrey was popular in school and

was the student president of the class of 1940 at Woonsocket High School. His parents were grooming young Godfrey for college, but starting in his senior year he repeatedly tried to enlist in the Canadian Army to become a part of the war effort in Europe, traveling to Providence, Rhode Island, in a vain attempt to head north.

Thwarted by his parents, Godfrey then set his sights on joining the Royal Canadian Air Force (RCAF), only to be foiled when his parents called the FBI (enlisting in the military of a foreign nation was illegal at the time due to the US government's Neutrality Act). But Godfrey would not be denied. He kept working on his parents until, in October 1941, they gave in, with the ultimatum that if he washed out of pilot training he had to come home and go to college.

Godfrey traveled to New Brunswick to undertake his initial military training, but two weeks into the program he received a shock: his older brother, Reggie, had joined the Civilian Technical Corps, a group of American civilians with electronic skills who had volunteered to go to Britain to help expand the country's radar network. Reggie was traveling on board the SS *Vancouver Island* on October 15, 1941 when the vessel was sunk by U-558 off the coast of Greenland with heavy loss of life. Reggie was amongst those to perish. Godfrey's parents begged Johnny to give up on his plans to fight, but Reggie's death only steeled his resolve.

Godfrey finished military training and, in October 1942, completed flying school, earning him the rank of sergeant. He sailed to England immediately thereafter and, upon his arrival, discovered he had been promoted to pilot officer. Godfrey was assigned to Spitfire- equipped No 57 Operational Training Unit for advanced training in December, but before he could join an RAF squadron, he was transferred to the USAAF's VIII Fighter Command as a second lieutenant in April 1943. Five months later he joined the P-47-equipped 336th FS, which was part of the 4th FG based at Debden.

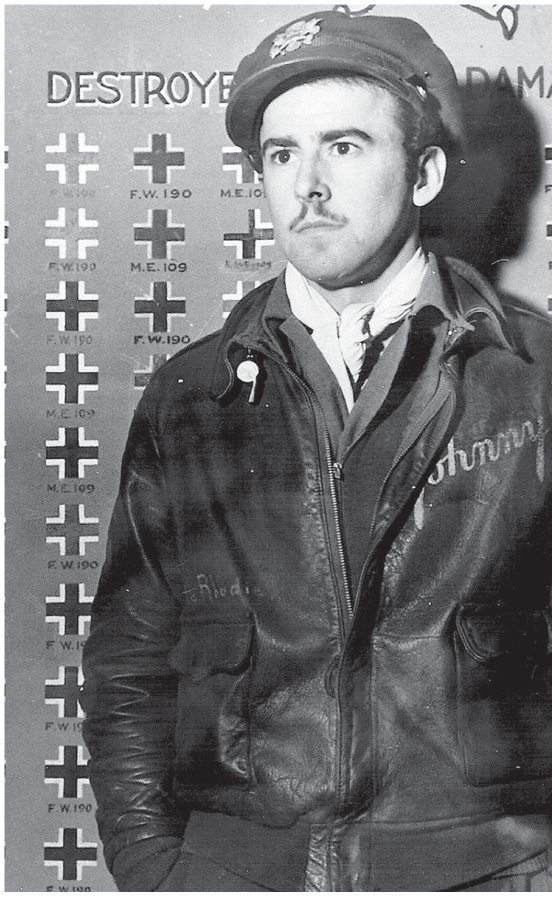
1Lt Johnny Godfrey and Capt Don Gentile pose for press photographers at Debden in April 1944 during the so-called "ace race" between the two men. The "competition" came to a halt on the 13th of the month with the end of Gentile's tour and the "pranging" of his P-51B-7 43-6913 *SHANGRI-LA* during a low-level beat-up of Debden. Although hailed as a great duo, the two flew as assigned wingmen just ten times. (National Museum of the USAF)

The 4th had been activated as part of the Eighth Air Force in September 1942, its trio of squadrons having previously been the RAF's Nos 71, 121, and 133 "Eagle Squadrons." These units had been manned by American volunteer pilots who had all taken a similar path to the war in Europe as Godfrey. Most "Eagle Squadron" pilots had extensive combat experience, and they were ready to impart this to an eager young aviator like Godfrey. The group had swapped its Spitfires for P-47s in early 1943, and Godfrey was soon checked out in the Thunderbolt. Finally, on September 27, 1943, he flew his first mission, as wingman to section leader 1Lt Don Gentile. It was a pairing that would prove to be fortuitous for the USAAF, although not so much for the Luftwaffe.

By November, Godfrey was assigned his own P-47D-1 (42-7884), and he quickly had his crew chief apply a name to the machine – *REGGIE'S REPLY*. The fighter also had a cartoon depicting his terrier "Lucky" (who occasionally

went up with him on training flights), framed by a golden horseshoe, applied to its cowling.

It was not long before Godfrey began to get the vengeance for his brother he sought: he recorded a probable on November 29, and on December 1, on the way home from a "Ramrod" mission to Solingen, he spotted a Bf 109 trying to position itself up-sun of a B-17 straggler. Godfrey was in turn up-sun of the enemy fighter, putting him in an ideal position for abounce. He descended toward the Messerschmitt, using the Thunderbolt's exceptional speed when diving to close fast, and opened fire at 250 yards. "Immediately, red and white sheets of fire enveloped him," Godfrey reported. "I pulled up to watch him go down, but there was nothing left."



Newly promoted Capt Johnny Godfrey poses in front of the 4th FG's scoreboard in the officers' mess at Debden in late April 1944. Under the leadership of Col Don Blakeslee, the group was credited with 207 victories during the month of April – including four in the air and 7.25 on the ground by Godfrey. (National Museum of the USAF)

His next victories came on December 22 during a mission to Münster. Over the Netherlands, Godfrey and two other pilots from the 336th FS spotted four Bf 109s below them. He executed a "split-S" maneuver that put him on the tail of one of the fighters. As he closed in to fire, 1Lt Vasseure Wynn took a shot at the aircraft, hitting it in the wing and fuselage. The Messerschmitt pulled up, which allowed Godfrey to close in and open fire, getting strikes on the wings, fuselage, and tail. The burning Bf 109 rolled over and dived into the ground.

"I then closed on the No 1 and started to fire," Godfrey said. "I saw strikes on the wings, fuselage and cockpit. Bits flew off the aircraft and I watched the pilot bail out as the Me 109 went of control through the clouds." Another Bf 109 then worked in behind Godfrey's P-47 and fired, and he felt hits on his aircraft and saw tracers flash past his cockpit. "As I was practically in a stall, I yanked back on the stick, applied rudder, and my aircraft toppled over and spun out," Godfrey later recounted. Spinning down through the cloud, he lost the pursuing Bf 109 but almost fell victim to a more dangerous foe – the ground. Godfrey straightened out from his dive at an altitude of 50ft. He was credited with 1.5 victories following this mission.

January 1944 was a month of major changes for the 4th FG. At the top, Lt Gen James "Jimmy" Doolittle relieved Lt Gen Ira Eaker as commander of the Eighth Air Force. He quickly instituted policies that would release its fighter units to be more aggressive in pursuit of the Luftwaffe. At Debden, on January 1 Lt Col Don Blakeslee took command of the 4th. Blakeslee was an ideal commander to put Doolittle's directives into action. As a result, Godfrey and his fellow pilots would find ample opportunity to run up their scores.

Blakeslee's energetic leadership went beyond the fighting attitude he inspired in his men. Having seen considerable combat in the small and agile Spitfire whilst serving with the RCAF and No 133 "Eagle" Sqn, he had an intense dislike for the big, and in his view, cumbersome P-47. This was further reinforced during his brief time flying the Mustang with the 354th FG in late 1943. In fact, on December 20, Blakeslee had shot down a Bf 110 over Bremen while leading the "Pioneer Mustang Group."

Coveting the P-51B for his own group, Blakeslee launched a campaign to get Merlin-powered Mustangs for the 4th, spending much of his time in January and February pestering Eighth Air Force HQ. The latter feared the

group would be grounded for re-training just as it was ramping up its efforts to destroy the German fighter force. Blakeslee duly promised VIII Fighter Command that his pilots could take the Mustang into combat within 24 hours of their delivery. His efforts paid off, and on February 25, 31 new P-51Bs were delivered to Debden. A further 14 had arrived by February 28, and the following day the 4th flew its first Mustang mission.

On March 2, Godfrey was flying section lead with flight leader 1Lt Duane Beeson when they encountered several Fw 190s. After a "cat- and-mouse" chase through the clouds, Godfrey could only claim one aircraft damaged. Nevertheless, this was the first time he had engaged the enemy whilst flying a Mustang.

By March 3, the 4th FG was ready to head for Berlin. Godfrey was teamed with Gentile for the mission, and bad weather on the way to the target meant that they arrived there by themselves. About 100 miles from the German capital the weather improved, and the better visibility allowed the two to spot 50+ "Do 217s" (these aircraft were probably Bf 110s) climbing for altitude, shielded by about 100 Fw 190s above them, preparing to attack the bombers head on.

ILL WIND SOUTH OF BERLIN

On March 6, 1944, just south of Berlin, as the bomber force approached their initial point, the Mustang pilots of the 4th FG saw contrails gradually turning toward the "heavies." Eventually, 12 separate contrails could be seen, each an enemy fighter. Below this high cover, 20 more single-engined fighters acted as a screening force for 20 Bf 110s equipped

with W.Gr. 21 rocket tubes. Six Fw 190s passed below the lead element of the 335th FS, then the B-17s were engaged by Bf 110s firing rockets. One bomber was hit and exploded.

Moments later, the lead flight of the 335th FS flew head-on into the 20 fighters screening the *Zerstörer*, while 1Lt Nicholas Megura's flight passed over the melee to get onto the tails of the Bf 110s. Megura (in his assigned P-51B-5 43 6636 *ILL WIND*) was actually a mission spare from the 334th FS, having tagged onto the 335th FS in search of combat.

After breaking up the attacks of two three- ships of Bf 110s, Megura gave chase to three more rocket-carrying *Zerstörer*. He was closing on them when they fired from extreme range – their rockets burst behind a box of bombers. Megura raked the three Bf 110s flying wingtip- to-wingtip. The bomber-destroyer on the left broke into the Mustang pilot, who scored strikes all over its cockpit and in both engines as the Bf 110 disappeared below him. Megura closed in on the middle Bf 110 and peppered it too, observing strikes and an explosion in the cockpit as pieces fell off the aircraft. The Bf 110 fell into a vertical dive, trailing black smoke.

Megura then banked to the right in pursuit of a Bf 110 climbing to fire on the bombers. Realizing his plight, the German pilot performed a series of violent maneuvers and then dove for the deck. With just one gun still operable, Megura scored hits on the port engine and cockpit. To avoid overshooting, he slid to the left, then back into position, and at low altitude hit the Bf 110 in the wing and cockpit. The *Zerstörer* lost its port wing, nosed over, and crashed. Megura was credited with two victories. For this, and the mission on March 8 (when he downed a Bf 109 and an Fw 190), he was awarded the Distinguished Service Cross.

Knowing there were no other friendly fighters around, Gentile asked Godfrey if he wanted to attack. “You’re the boss,” Godfrey replied, and the two dove on the “Do 217s.” Streaking through their formation head-on, they thoroughly disrupted their attack run. Gentile got one of the twin-engined aircraft smoking, and he also despatched an Fw 190 that overshot him before Godfrey screamed that 50 more fighters were coming in on their tails. In the twisting battle that ensued, Godfrey kept Gentile’s tail clear as Gentile flamed another Fw 190. When both were out of ammunition, they descended into an undercast as German fighters closed behind them. Luckily, they disappeared into the cloud bank before the enemy could reach them, and they safely made it back to Britain and landed at Hurn, in Dorset, just as their fuel tanks ran dry.

The 4th went back to Berlin on March 4 and 6, and on the latter mission Godfrey scored his first victory with the Mustang. Flying at 27,000ft, the 336th FS spotted 12 contrails about 1,000ft above them and climbed to attack. Moments later, Godfrey looked down and saw about 20 twin-engined

aircraft attacking bombers from the side of their formation. His leader dived to intercept, and Godfrey was about to follow suit when he sighted two Fw 190s coming down on his tail. Pulling up and around, Godfrey positioned himself behind the Focke- Wulfs, but "due to their excessive speed in the dive I could not catch up very fast," he reported. Eventually closing to within firing range of the trailing fighter, he scored two hits on its wing before being forced to break away after spotting yet more Fw 190s turning onto his tail.

On the way home, he formed up with 1Lt Archie Chatterley of the 334th FS. The two flew at low altitude, strafing a train and an airfield along the way and damaging two aircraft, before setting course for Debden. Chatterley was just getting ready to use his relief tube when tracers began flying past him on either side of his cockpit. "I told him to break, which he did, but he got clobbered," Godfrey said. "I broke into the Me 109 head-on. Only one gun was still firing, so I was rather shaky."

Chatterley's Mustang was too damaged for him to join in the fight, forcing Godfrey to go it alone. "The Me 109 made three head-on attacks, and on the last one I managed to turn inside him and get on his tail. We were at 500ft at this time and he tried to break down. I followed him to the treetops, firing one gun, but had to do a half-roll to come out of the dive." The Bf 109 pilot was not so effective in his maneuvering, and "one wing hit the trees and he did a cartwheel," Godfrey recalled. "I had to break off or I would have done the same thing." The victory brought his score to 3.5.

On March 8, the bombers headed for the VKF ball bearing works at Erkner, a suburb in east Berlin. The 4th FG went with them, rendezvousing with the "heavies" just as a wave of German fighters attacked. Several bombers were shot out of formation, and Gentile and Godfrey climbed at full power to intercept the enemy aircraft before the next wave opened fire.

1420 hrs MARCH 29, 1944

THIRTY MILES NORTH OF BRUNSWICK

1 The 335th FS/4th FG is approaching the rear box of bombers of the 1st Bomb Division, which have just bombed Brunswick. 1Lt Paul Riley and "Green" Flight spot 12 Bf 109s flying towards the bomber stream and turn to intercept them.

2 Spotting the attacking Mustangs, the Bf 109 pilots turn in to attack, jettisoning their fuel tanks.

3 1Lt Clemens Fiedler dives after the lead Bf 109, but it evades violently, ruining his shot. He then switches his attention to the No. 3 aircraft in the formation, which takes no evasive action as he "walks" his 0.50-cal. fire across the wing roots, cockpit and engine. The Bf 109 trails white smoke, rolls slowly onto its back and falls into a spin.

4 Riley spots another Bf 109 "split-essing" to the left. Without hesitation, he pulls the same maneuver and follows.

5 Riley follows the Bf 109 down, closing so rapidly he has to chop his throttle as the fighters plummet from 21,000ft to 8,000ft. He opens fire from immediately behind the enemy fighter and it explodes, forcing Riley to firmly push the control column forward in order to avoid the debris. He then pulls up and rejoins the squadron.

6 As "Green" Flight engages the Bf 109s, "Blue" Flight, led by 1Lt Pierce McKennon, spot a second gaggle of Messerschmitt fighters targeting the rear of the bomber box. "Blue" Flight dives in their direction in an attempt to cut the Bf 109s off.

7 Closing with two Bf 109s flying line-astern, McKennon and his flight are suddenly blocked from attacking the rear aircraft by an unpainted P-51B with a yellow nose.

8 McKennon switches his focus to the lead Bf 109 instead.

9 Spotting the closing Mustang threat behind him, the lead Bf 109 pilot rolls over into a steep dive, hoping to shake off the pursuing P-51B.

10 Descending from 19,000ft down to 5,000ft, McKennon fires three bursts into the Bf 109, which dives into the ground and is destroyed.

11 As McKennon engages the lead Bf 109, 1Lt Robert Church (335th FS) sees another Messerschmitt heading for the bombers and chases after it.

12 Spotting the Mustang, the Bf 109 pilot "bobs and weaves" frantically as he closes with the bomber box, hoping to spoil Church's aim.

13 Steadying himself to fire, the German pilot levels the wings of his fighter, giving Church his chance. The Bf 109 is fatally hit, and it plunges to earth trailing smoke and flames.

1
2
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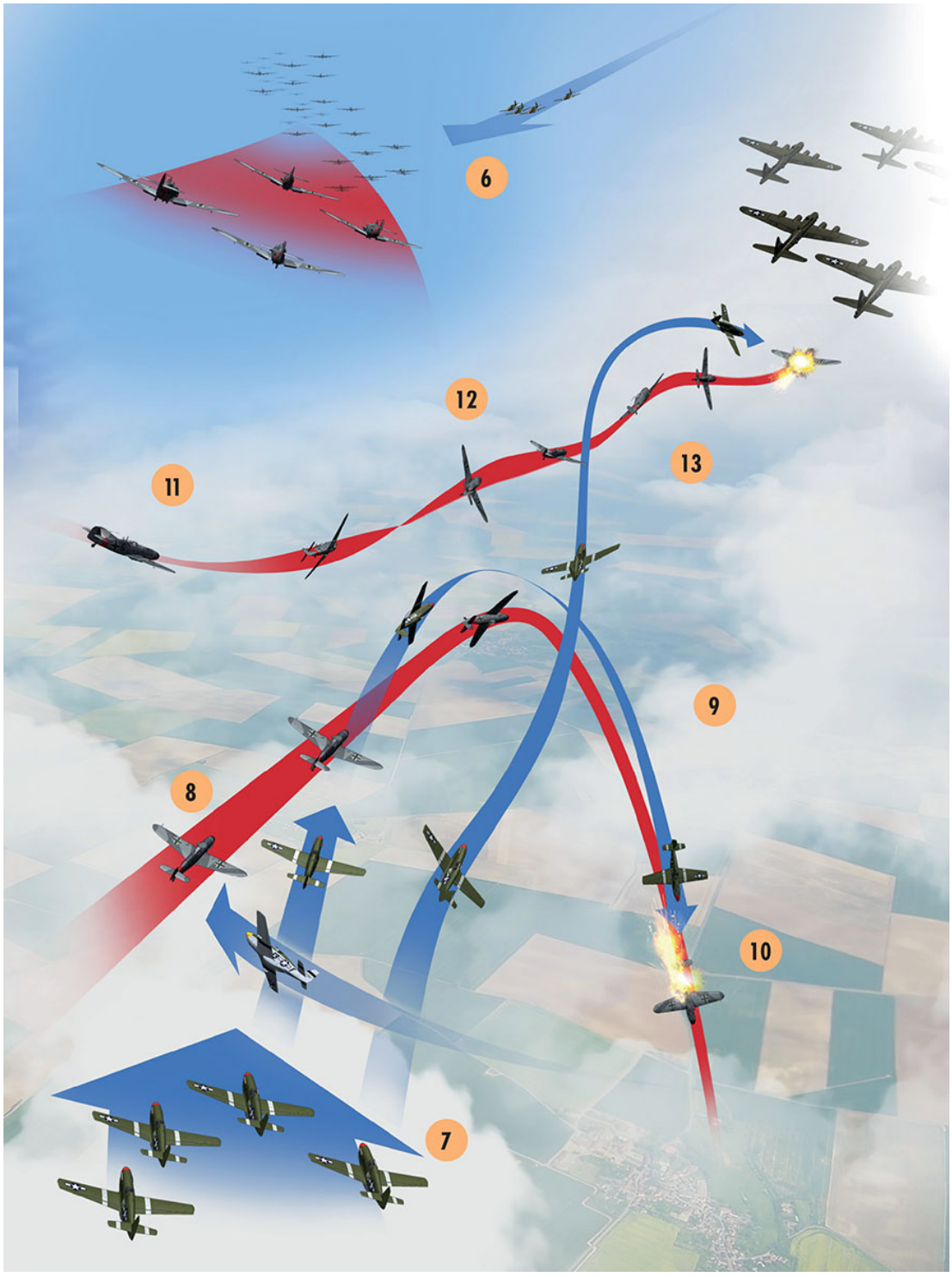


The two Mustang pilots managed to position themselves between the bombers and 60+ German fighters massed for a head-on pass. An Fw 190 quickly fell to Gentile's guns, immediately after which the pair fell upon two

Bf 109s flying line abreast. "We made about six or seven [descending] turns with them, and ended up at 20,000ft," Godfrey reported. "I managed to get onto the tail of one of the 109s but could not get the right deflection. I closed to 75 yards line astern, and noticed strikes. He rolled over, and I really clobbered him. The pilot bailed out." Gentile's target caught fire and fell apart, its pilot bailing out. He then gave chase to another Bf 109 and, after a long turning fight that saw both aircraft lose altitude, the German pilot made the mistake of attempting to dive to safety. The Mustang soon closed up with the Messerschmitt, whereupon Gentile's guns blew it to pieces.

Climbing back up to 20,000ft, the P-51 pilots spotted two more Bf 109s below them and dived to attack. They each targeted a fighter, their pilots seemingly oblivious to the approaching danger. Godfrey's target exploded when he opened fire from 200 yards, while Gentile's rounds shattered the cockpit of the Bf 109, which also burst into flames.

Godfrey glanced around and spotted a third Bf 109 bearing down on Gentile's tail, and he yelled for his leader to break into the attack. Gentile duly did as he was told, and his opponent was forced to make a hasty head-on pass, but missed. In short order, Godfrey and Gentile had the lone Bf 109 bracketed between them, and it dived for the deck. The two Mustang pilots took turns firing at the Bf 109 until Godfrey ran out of ammunition. Gentile finished the fighter off, setting its belly tank on fire and forcing the pilot to bail out. Credited with 2.5 victories following this mission, Godfrey became an ace. He was also awarded the Silver Star for valor.

Mechanical problems with the Mustangs kept them grounded between March 13–15, but on the 16th the group headed for Munich. The Luftwaffe sent up rocket-armed Bf 110s to tackle the bombers, and 13 of the 20 *Zerstörer* sortied fell to the guns of the 4th, including one destroyed by Godfrey.

He failed to add to his growing tally of aerial victories during the 4th FG's next few missions, even though he was able to fire 40 rounds without effect at an He 111 damaged by 1Lt Kendall "Swede" Carlson on March 18. Virtually empty skies over Germany on the 22nd indicated that the Luftwaffe was hastily regrouping following the severe losses it had suffered in previous days. On the 23rd, enemy fighters were up again in force, and the 4th FG claimed

11 victories – one of these was a Bf 109 that fell to Godfrey near Münster for his eighth kill.

"We bounced two enemy aircraft at the rendezvous with the bombers," Godfrey noted. "I gave cover to my No. 1, Capt Gentile, while he shot down an Me 109. He saw another and engaged it." Godfrey again covered his leader, whilst keeping one eye on two more Bf 109s above them. "Gentile called up and said everything was okay, and that it was my turn to get one."

Godfrey spotted a Bf 109 in a shallow dive above him and gave chase. "Instead of turning to engage me, he gave full throttle and increased his dive, trying to get away from me." Godfrey closed and caught the fighter before it could dart into a cloud. "I was closing so fast he would never have made it, so he made a half-hearted turn to port. I closed up and allowed about two rings' deflection, giving him a short burst. He must have panicked when I fired at him, for instead of keeping up his turn, he flicked over onto his back and half-rolled. My speed at this time was about 400mph indicated, and I dared not follow him in this maneuver for I was only at 2,000 to 2,500ft. The last I saw of this Jerry, he was going straight down through the cloud. I claim this enemy aircraft destroyed because he never could have pulled out of the dive."

As Gentile and Godfrey climbed back up to 4,000ft, they spotted another Bf 109 flying across the top of the clouds. Their foe, however, saw Godfrey's bounce coming and escaped by ducking into the undercast.

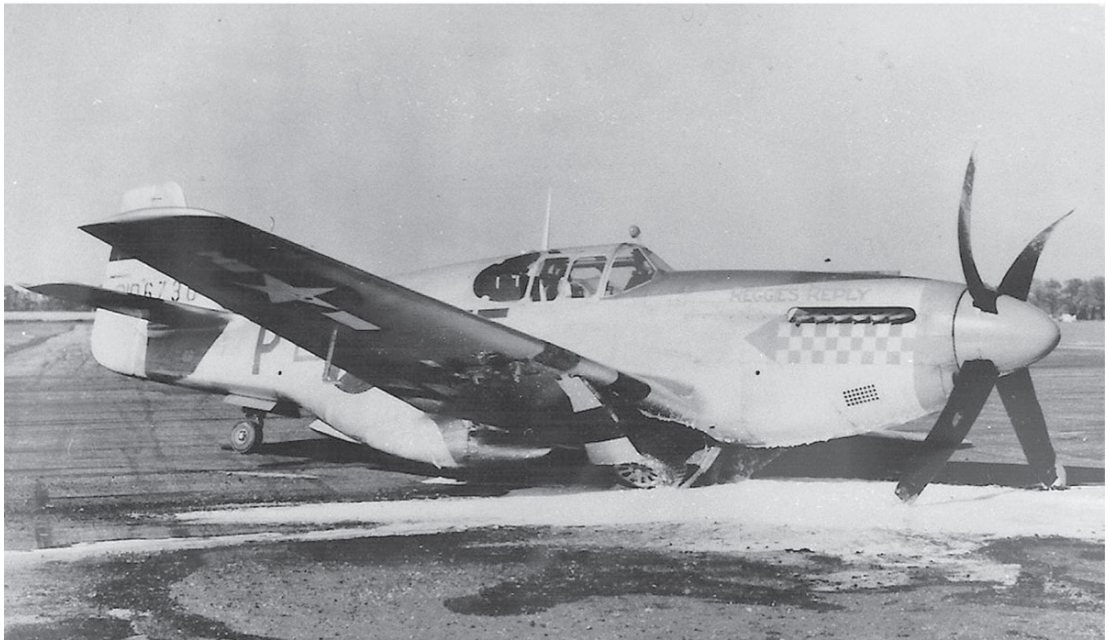
On March 29, the 4th FG was charged with escorting the bombers of the 1st Bombardment Division to Brunswick. Godfrey was again teamed with Gentile, and they were lurking at 27,000ft, high above the bombers, when they spotted eight Fw 190s below the B-17s at about 17,000ft. "I followed my No. 1 down, giving him cover," Godfrey reported. "My No. 1 was gradually getting away from me. I saw two Fw 190s trying to position themselves behind my No. 1. It never dawned on me that my motor had cut, and that was why I could not catch them."

Temporarily rendered a spectator, Godfrey saw Gentile down an Fw 190. He then called for his leader to break when the enemies on his tail closed to within 600 yards. Gentile quickly swung into the clouds, while Godfrey diagnosed his engine problems – he had forgotten to switch fuel tanks. "Underneath the clouds, two Fw 190s with two Mustangs on their tails tried

to fire at me. I dropped flaps and opened my throttle in an upward spiral turn. I looked behind and saw one of the Fw 190 pilots bail out. I found out later this was 1Lt (Charles) Anderson's Jerry."

Godfrey, having lost Gentile when the latter sought refuge from his would-be attackers in cloud cover, formed up with Anderson instead. Their opponents sensed the fight had turned, and duly dived for the deck. "I tagged along line astern," said Godfrey. "We chased them on the deck at full throttle, going about 375–400mph. I queued up behind one and fired from 300 down to 200 yards. Firing short bursts, I noticed strikes most every time. After the fifth or sixth burst, he dropped his wing and went straight in." The Focke-Wulf exploded directly in front of Godfrey, and he was fortunate that his Mustang sustained no damage.

He then located the Fw 190's wingman and gave chase for several minutes, using the superior speed of the P-51B to close on the fleeing fighter until it was in range of his guns. Again, Godfrey fired off short bursts, seeing strikes across the cockpit and fuselage. "I must have given him six or eight short bursts, but he still wouldn't go in. On my last burst I hit him in the engine, and noticed white smoke and one of his wheels drop down." Godfrey then pulled sharply up to the right, and the last view he had of the Fw 190 was the fighter at low altitude, smoking heavily.



Capt Godfrey's final assigned Mustang, P-51B-10 42-106730 *REGGIE'S REPLY*, sits in a forlorn condition at Martlesham Heath after suffering a takeoff crash with 2Lt Robert Tussey at the controls on April 26, 1944. Despite have flown only a handful of missions, 42-106730 was written off. Unbelievably, Tussey had also been flying Godfrey's previously assigned Mustang (P-51B-5 43-6765) when it was so badly damaged during a training mission that it had to be sent for depot-level repair. (Author's Collection)

Continuing to climb up to the right, Godfrey was relieved to see the rest of his section behind him, formed up. The four aircraft then dropped back down to low altitude, where they stumbled across a lone He 111 trying to stay out of trouble. Godfrey and two of his pilots then took it in turns to make single firing passes on the bomber, which force-landed in a field near Brunswick. They each received 0.333 of a credit for the He 111, making Godfrey's tally for the mission 1.333, plus a probable.

April saw Godfrey run up his score against ground targets, destroying two aircraft each on separate missions on the 4th and 9th. In an irksome turn of events, his assigned P-51B-5, 43-6765, was damaged during a training mission while being flown by Godfrey's roommate, 2Lt Robert Tussey. It left Debden for depot-level repair, and the Mustang, adorned with a red- and-white checkerboard below both exhaust stacks (a marking applied by both Godfrey and Gentile to their Mustangs in order to keep track of each other when in combat), never returned to the 4th FG.

In mid-April, Godfrey, who had been temporarily grounded due to exhaustion, received P-51B-10 42-106730. This unpainted Mustang arrived fresh off NAA's Inglewood, California, assembly line. 43-6765 had been camouflaged in olive drab-over-gray and otherwise unadorned, save for standard tactical markings and a growing number of white crosses below the cockpit, indicating victories. Godfrey asked his crew chief, Sgt Larry Krentz, to put personal markings on the new fighter. The checkerboard (comprising red squares only this time) returned below the exhaust stubs, with a neat arrowhead at its back, 11 black crosses were carefully masked and painted beneath the cockpit, and the name *REGGIE'S REPLY* was added in red on either side of the nose just below the olive drab anti-glare panel. It was a "sharp-looking ship."

Godfrey's first mission in his new Mustang, on April 22, was a fighter sweep between Kassel and Hamm. As the group let down from 25,000ft, he noticed a gaggle of Bf 109s forming up below them. The Mustangs orbited, then pounced, by which time the German pilots had already formed into a fully defensive Lufbery Circle for mutual support. "I split up from my No. 1 and orbited the outskirts of the circle," Godfrey later recalled. "I could not get inside the circle without getting a couple on my tail."

Suddenly, one of the German pilots panicked, broke off, and tried to escape. Godfrey closed quickly to 350 yards, gave him about 15 degrees of deflection and opened fire with his four 0.50-cal. machine guns. "I got a lucky hit and he straightened up for me," Godfrey reported. "I clobbered him really good and noticed strikes in the cockpit and engine. He pulled up and rolled over, with flames and smoke pouring from him. This 109 went straight in."

Turning back in the direction of the Lufbery Circle, Godfrey arrived on the scene just in time to see a second Bf 109 break and run. He chased the fighter down and opened fire from 300 yards, peppering the engine and cockpit. "The kite began to smoke and I overshot to starboard and pulled up, preparing to make another attack. The Jerry was smoking and losing altitude. I guess he figured he didn't have a chance because he bailed out at approximately 1,500ft."

Godfrey then spotted a third Bf 109 on the deck in a turn. He dropped his flaps and dived down in an even tighter turn so as to set up a deflection shot.

"I got very close to this one," he said. "He got lower and lower, above the trees. I had quite a job keeping on his tail, as I would get in his slipstream, which nearly flicked me into the deck. Two of my guns jammed, but I still kept firing. I saw a good strike on his cockpit and he lost speed. I overshot him, sliding off to port. He flicked over and went straight into a bunch of trees."

Godfrey started to orbit, hoping to get gun camera footage of the burning fighter. Part way through the turn he looked behind him, and instead of his wingman he found a Bf 109! Godfrey immediately dropped his flaps and turned hard, disrupting the aim of his quarry. Moments later, another Mustang swooped down and despatched Godfrey's pursuer. "I was too shaken to get a picture of my last Jerry," Godfrey said, "so I hot-footed it for altitude."

At the controls of *REGGIE'S REPLY* again on April 24, Godfrey destroyed an Fw 190 and damaged another northwest of Ludwigshafen. Two days later, again with the unlucky 2Lt Robert Tussey at the controls, the fighter crashed on takeoff from Martlesham Heath, in Suffolk, when the pilot accidently retracted the undercarriage prematurely when the gear lever was knocked by his RAF-issue flying boots. 42-106730 was written off just weeks after it had been issued to the 336th FS. This proved to be Godfrey's last assigned aircraft with the 4th FG.

Following the loss of his second *REGGIE'S REPLY*, Godfrey took out his frustrations on German airfields, destroying a Do 217 and two Ju 52/3ms at Nordhausen on April 29 and being credited with a half-share in a Do 24 flying boat sunk at Lyon anchorage the following day.

On May 1, Godfrey was part of the escort for bombers northeast of Saarbrucken when he saw 12 aircraft to the rear of the "heavies" flying in a formation that resembled one routinely employed by American fighters. "I took them as friends," said Godfrey, but "when they got closer I recognized them as bandits." He radioed to attack, but his transmission was blanked out by another message – when Godfrey looked around, his was the only fighter diving on the enemy! "I came down and made a half-hearted head-on attack after a couple had reached the bombers," he said. "The rest scattered and I found I was right in the middle of the gaggle.

"I tied onto three Me 109s who pulled up to make another pass at the bombers. By this time other Mustangs had arrived, so I singled one out, who

did a split-S through an opening in the clouds. I had no difficulty in following him, and caught up to him at 2,000ft. I climbed up his tail and pressed the old tit, seeing bags of hits all over. I pulled up to port and came down again. Again, I clobbered him and pulled up to port. The pilot jettisoned his hood, so I came back again to try and hit him before he bailed out. During this time he took no evasive action. Before I got down again, the pilot had bailed out, so I waited for the kite to go in, and I took a picture of it."

The German pilot was still floating down below his parachute canopy. Godfrey flew toward him, and noticed when he was close enough that "he was wounded in the right shoulder, and that he wore black boots and a battle jacket similar in style and color to that of the RAF. I waggled my wings, and he waved with his left hand very vigorously."

With that, Godfrey's tour had come to its end. He had 14.333 aerial victories and a handful of strafing kills to his name, and Eighth Air Force public relations had made the story of top ace Gentile and faithful wingman Godfrey a well-known tale back home (even though the two had flown together on just a handful of memorable missions – ten at most, by Godfrey's recollection). Gentile had left the group on April 14, the day after he crashed his Mustang buzzing the field at Debden in front of the assembled press there to witness the ace's return from the final mission of his tour. Godfrey joined him at the Replacement Control Depot at Washington Hall in Chorley, Lancashire, and the two then returned home together to embark on a series of war bond rallies.

Gentile's prang exiled him to stateside duties for the rest of the conflict, but Godfrey felt out of place at home with the war still on. In July he managed to escape the US and head back to England to commence a second tour with the 4th FG's 336th FS. By July 31, he was in a Mustang (this time a P-51D) once again, claiming a Bf 109 in the air near Osnabrück and three Ju 52/3ms on the ground during the mission of August 5. The next day, Godfrey knocked down an Me 410, but his Mustang was hit by flak shortly thereafter. With the fuel system badly damaged, Godfrey jettisoned the canopy and prepared to bail out.

However, squadronmate and fellow ace 1Lt Fred Glover suggested to him over the radio that he use the engine's hand-pump primer, which would inject

raw fuel directly into the cylinders, thus keeping the Merlin running until he could reach friendly territory. Godfrey worked the pump for two-and-a-half hours, fighting muscle cramps and blisters and wearing a hole in the thumb of his flying gloves, but he was able to safely land at The Beeches, in Norfolk.

Godfrey's luck finally ran out on August 24 during a strafing attack on the airfield at Nordhausen. On his first past, he set a Ju 52/3m ablaze, but his fighter was also hit – not by enemy flak, but by the 0.50-cal. rounds fired by his wingman, 2Lt Melvin Dickey, who was following his leader too closely. Despite trailing coolant behind him, Godfrey made three more passes, burning a Ju 52/3m on each run. Eventually, however, the engine seized and he made a forced landing, suffering cuts to his legs and head in the process. Godfrey quickly fled the crash site, traveling 13 miles in a day. He had hoped to board a train, but he was apprehended by railway guards and sent to *Stalag Luft* III at Sagan, in western Poland.

Capt Godfrey describes the mission of August 6, 1944 to squadronmate, and fellow ace, 1Lt Fred Glover with his hand still bandaged. It was blistered by him having to continuously pump the primer handle of his flak-damaged P-51C-7 (42-103603) for more than two hours in order to keep the engine running for the return flight to England from Berlin. (Author's Collection)

In February 1945, when the Germans started moving prisoners out of the camp ahead of the Soviet advance, Godfrey seized the opportunity to escape in the confusion. Cold and frostbitten feet forced him to return to captivity, however. He then escaped again at Nurnberg, trading clothing with a French forced laborer and teaming up with two more escaped PoWs to head toward the front. Again, the Germans recaptured him. The third escape went like a charm, with Godfrey, assisted by a German farmer, reaching Allied lines just before VE Day.

With 16.333 aerial victories and 12.666 strafing kills, Johnny Godfrey destroyed more German aircraft than any other pilot in the 4th FG. After being discharged from the USAAF in January 1946, he worked in his father-in-law's lace-manufacturing business, and was elected to the Rhode Island state senate in 1952. In 1954, he moved his wife and two sons to Maine, where he opened his own lace mill. In 1956, a series of odd symptoms sent Godfrey to the doctor, who diagnosed amyotrophic lateral sclerosis. He passed away in 1958 at the age of 36.

CHAPTER 4
WEAPON OF WAR

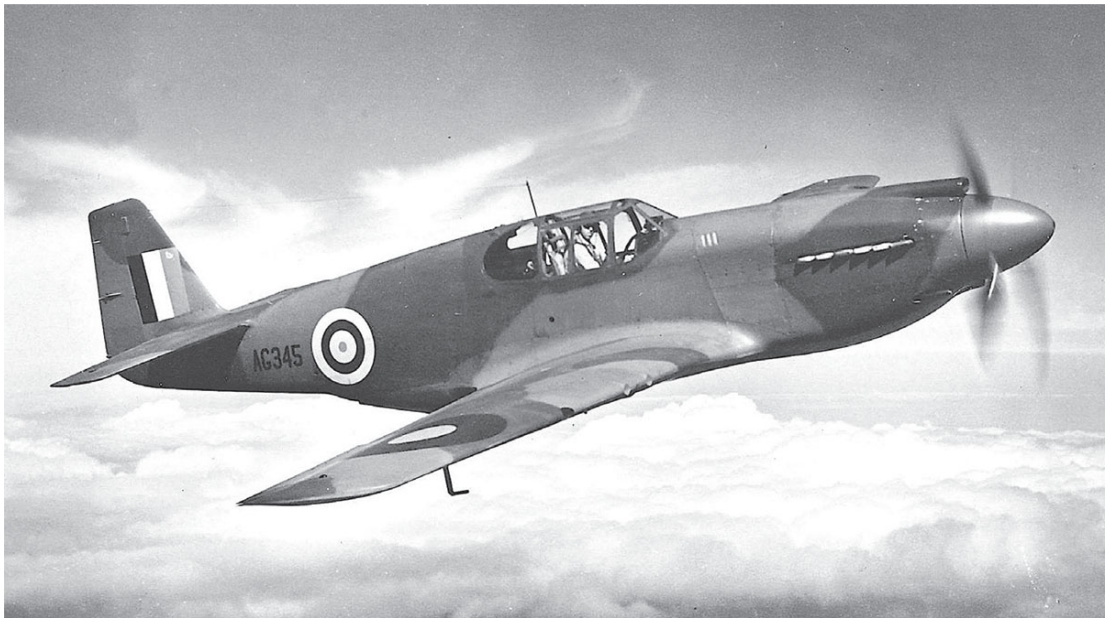
The story of the P-51B's development is a tale of international intrigue, ingenuity, idiotic decisions, and expedience. The talented team at NAA and a few champions within the USAAF battled to keep the Mustang program alive long enough for a British engine to create the solution to the escort crisis threatening the primary mission of the Eighth Air Force in Europe – long-range daylight bombing. Luckily, in late 1943, the answer to this crisis was nearly ready after a four-year odyssey that came to fruition at exactly the right time.

In November 1939, after the outbreak of war in Europe, the US Congress passed the Neutrality Act, which allowed the US government to sell arms to France and Britain on a "cash-and-carry" basis. On November 7, the British Purchasing Commission (BPC) established an office in New York, and by the end of the month the Anglo-French Purchasing Board (AFPB) had also been

created. The chief aim of these groups was the acquisition of modern American military aircraft.

NAA hoped to take advantage of this new market, but at the time only had experience in the design and manufacturing of training and observation aircraft. As a result, NAA sold 230 NA-64 trainers to France in late 1939. By then, company executives recognized that the trainer-based fighters NAA was exploring (including the NA-50 and near-identical NA-64, ordered by Peru and Thailand, respectively, and later taken over by the USAAC as the P-64) would be utterly outclassed by the fighters currently in combat in Europe. Something appreciably better was needed.

At about the same time, key components of the Mustang were emerging from research. NAA initiated wind-tunnel testing of a high-speed/low-drag laminar flow airfoil in November 1940, while Chief Preliminary Design Engineer Edgar Schmued had been working on drawings for a new fighter from mid-1939. In his initial designs – the Allison V-1710-powered P-500 and the Ranger inverted V10-powered P-500-1 – the outline of the Mustang was already emerging.



The Mustang I provided a capable low-altitude aircraft for RAF Army Cooperation units. However, the aircraft's Allison V-1710 engine prevented it from becoming an effective high-altitude fighter. This particular Mustang I, AG345, seen here in flight in August 1941, was retained by NAA at Mines Field, in California, for the installation and testing of RAF-specific changes requested following the aircraft's entry into frontline service. (Tony Holmes Collection)

By February 1940, Schmued had started sketches for the P-509, a V-1710-powered fighter boasting a radiator below and behind the pilot that would take advantage of the Meredith Effect; an aerodynamic principle that allowed the thrust of exhaust gases from the radiator to offset any drag penalty. On February 1, 1940, NAA briefed the AFPB on the Ranger- powered P-500 proposal. The AFPB concluded almost immediately that the fighter was not competitive with contemporary Axis designs, and formally requested that NAA build Curtiss P-40s under license instead. That request was repeated on February 25 and endorsed by Lt Col Oliver Echols, then Chief, Engineering Section of the USAAC's Materiel Division. Echols would go on to make a series of potentially fatal recommendations about the program.

Schmued, chagrined at the possibility of NAA's manufacturing capacity being committed to the nearly obsolete P-40, implored NAA President James Howard "Dutch" Kindelberger to instead insist that the company be allowed to design and build an all-new fighter for the AFPB. Kindelberger was already

inclined in that direction, and so he asked Schmued for a collection of drawings of the latest iteration of the P-509, which became the NA-73X prototype. The design featured such new elements as self- sealing tanks, the V-1710 engine, and armor plating – a signal to the AFPB that NAA had been listening to its requests. The BPC returned a list of additional improvements that included increased wing area, altered armament, and improved engine performance.

On April 11, 1940, the BPC issued a contract for 300 aircraft, to be delivered by September 30, 1941. The AFPB ordered 20 more.

The folklore about a contractual obligation for the NA-73 to fly in 120 days is a myth stemming from the British contract "boilerplate" term contained in all standard aircraft contracts placed by the BPC.The prototype, officially called the X73, was ready on September 9, with one major issue: ongoing struggles with Allison meant the engine was not delivered for a further 28 days. The X73 took to the skies on October 30, 1940 with Vance Breese at the controls.

After 3 hrs 20 min of testing, Breese gave way to test pilot Paul Balfour, who waved away Schmued and Breese when they tried to give him a cockpit check-out on November 20. Perhaps unsurprisingly, Balfour mismanaged his fuel, made a power-off landing in a plowed field, and flipped the X73 onto its back. The badly damaged aircraft was repaired and back in the air by January 13, and the program went on. While the airframe was being repaired, the BPC announced that the new aircraft would be named the Mustang.

Even as the Allison-powered prototype was being built, representatives from Rolls-Royce and Packard were hammering out the details for license production of the Merlin engine. Three-and-a-half years later, this decision would pay handsome dividends.

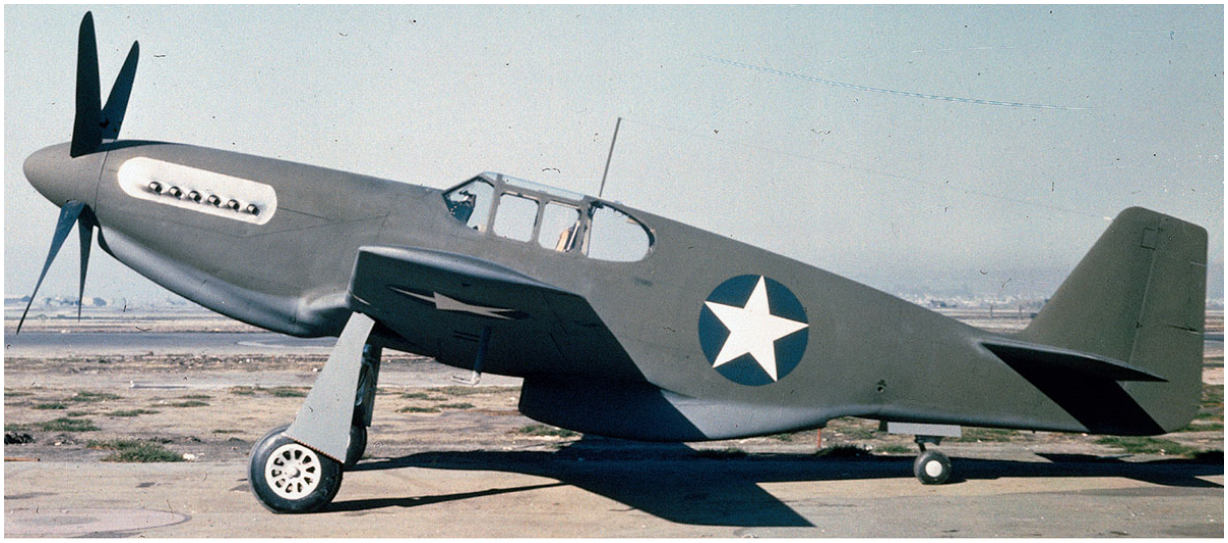
Following repairs and revisions to several systems, the X73 resumed flight testing on April 12, 1941. Just 12 days later, AG345 (the first Mustang I) took to the air. By now, the USAAC had expressed interest in the Mustang as well, and the first XP-51 was airborne for trials in May 1941.

The first Mustang I arrived in Britain on October 24, 1941, and further trials refined the type for combat in-theater. Changes, including an improved carburetor intake, were incorporated into the aircraft at RAF depots. In

February 1942, No 26 Sqn began operations with the Mustang. The initial order of 150 aircraft was supplemented by a request for 300 more.

Even as the Mustang was entering service with the RAF, its future was in doubt. On February 3, 1942, "Dutch" Kindelberger reported to Col Echols that RAF orders would be complete in August of that year, and without further orders the Mustang tooling would be put into storage to open additional manufacturing capacity for the B-25 Mitchell twin-engined medium bomber. The newly renamed USAAF did not have further funds to buy "pursuit planes," but it was at that time hunting for a single-engined attack aircraft that had some ability to defend itself against enemy fighters.

Capt Ben Kelsey, who led the USAAF's Fighter Projects Office at Wright Field, in Ohio, had flown the XP-51 and concluded that while the prototype had a few unfavorable performance characteristics, "the Mustang is able to engage or break off combat at will due to its higher speed." Kelsey began to circulate the idea of a dive-bomber version of the Mustang, which would fulfill the USAAF requirement and at the same time keep NAA manufacturing Mustangs. Not incidentally, NAA had already initiated studies of just such an aircraft, based on the Mustang, but featuring dive brakes, bomb racks, strengthened wing structure to accommodate either four 20mm cannon or four 0.50-cal. machine guns, and a fixed lower radiator scoop.



Merlin-equipped XP-51B 41-37421 was photographed at Mines Field with the original underfuselage intake, showing the "vertical" side view of the radiator scoop common to all previous Mustang types. (Author's Collection)

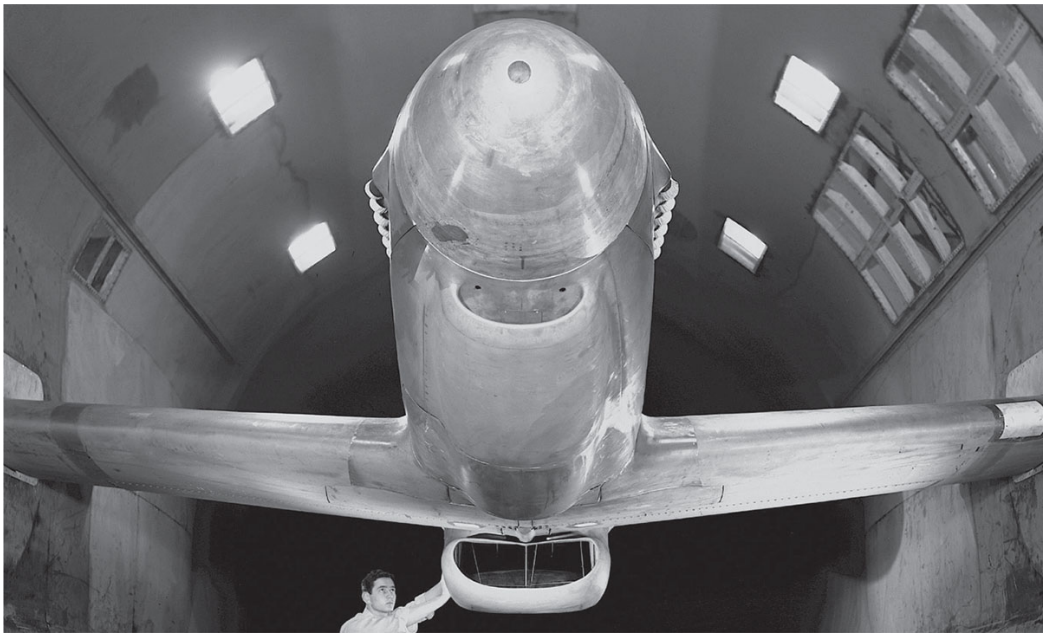
Echols attempted to stand in the way of the aircraft's development, but with the Douglas A-24 Banshee clearly unsuited to USAAF needs and the Curtiss A-25 Shrike still enmeshed in a prolonged development, there was no logical reason not to proceed with the project, coded NA-83 in NAA parlance. That fact was bolstered by the opinions of Col Ira Eaker, commanding officer of the 20th Pursuit Group, who flew the XP-51 in December 1941 and pronounced it the best fighter he had ever flown. The new aircraft was designated the A-36, and men in the field dubbed it the "Invader." The USAAF, however, officially called it the Mustang. A total of 500 dive-bombers were ordered, and they kept NAA in the fighter business through 1942.

In the meantime, RAF experience with the Mustang I – and the 20mm cannon-armed Mustang IA – in the Army Cooperation/Tactical Reconnaissance role had been very good. In fact, their performance was so good at low level that 55 of the 150 Mk IAs were reclaimed by the USAAF and named P-51s (with no suffix).

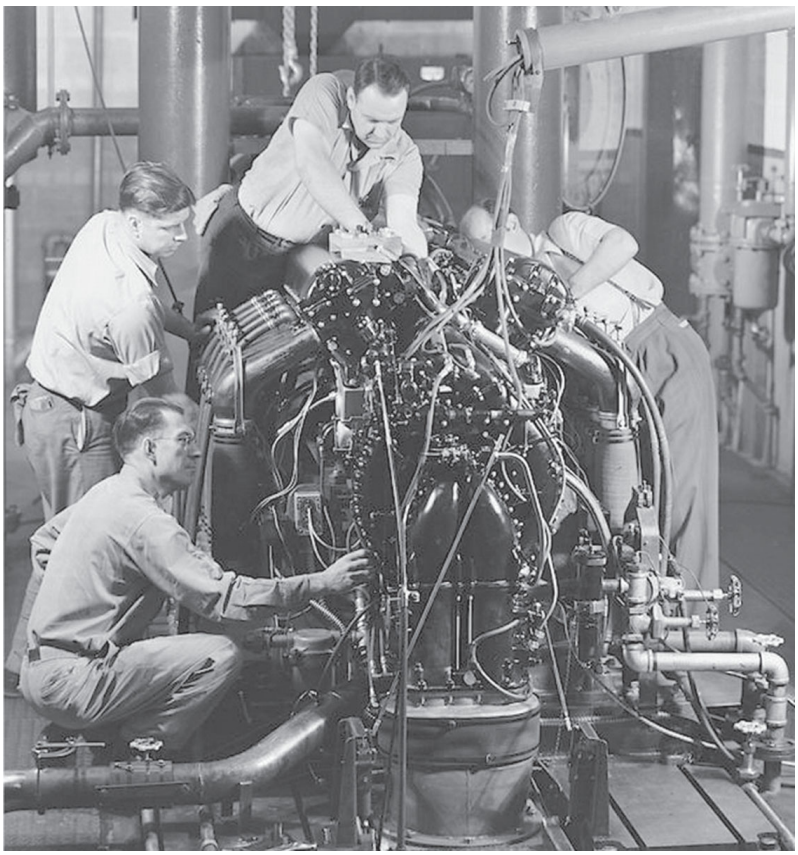
Fighter combat in Europe in the first 18 months of World War II had shown that most aerial action was taking place at medium to high altitudes – beyond the effective operating ceiling of the Allison-powered Mustang I and IA. Hoping to turn the low-level Mustang I into a top performer at all

altitudes, experiments in Britain fitting the Rolls-Royce Merlin engine in place of the V-1710 started in May 1942, with the first Merlin-engined "Mustang X" flying in October, although it experienced overheating and handling issues.

At roughly the same time, negotiations were underway for the Packard Motor Company to manufacture the Merlin on US soil. NAA had also seen the potential for the Merlin, and it spent much of 1942 redesigning the airframe to accommodate the engine. That meant a new ducting system for the radiators and engine intakes, as well as aerodynamic changes to the radiator intake and exhaust systems. The new aircraft held the potential not just for high performance at all altitudes, but for increased range.



The outer wing sections of XP-51B 41-37421 were temporarily "clipped" to allow it to fit into the 16ft wind tunnel at the NACA-Ames Research Facility in Mountain View, California. Testing adjustments to the scoop design allowed NAA to eliminate a rumble and vibration at high speeds caused by boundary-layer separation beginning under the nose and extending to the upper scoop, and extreme turbulence in the plenum. (Author's Collection)



A V-1650 Merlin here is given its post-assembly inspection on a test stand in one of Packard's factories. The company built 55,523 Merlins during the war at facilities in Detroit, Michigan, and Toledo, Ohio. (Author's Collection)

Testing of a P-51A modified into the Merlin-powered XP-51B began in January 1943, revealing a rumble in the radiator section in high- speed dives. A series of tests in the wind tunnel at the NACA-Ames Research Facility in Mountain View, California – run with a brave engineer nestled in the rear fuselage to make adjustments between and during the tests – resulted in a redesign that eliminated the rumble. This was achieved just as the P-51B was entering production. In fact, on March 31, 1943, the first B-model was delivered to the USAAF without the rumble "fix," which would feature on the second XP-51B. Evaluation of the new Mustang started almost immediately.

Results were promising, and the XP-51B smoothly progressed through testing. Production was hampered by two things: a strike at Packard, and a Materiel Command decision to allocate parts and engines to the Merlin-powered P-40F and P-40L programs. Furthermore, the USAAF requested an

additional 3,000 engines for the Curtiss fighters in 1943. Packard strained to meet its obligations to existing USAAF and RAF orders, and so Merlins for the Mustang were delayed, pushing back the P-51B's combat debut from September to December 1943. This duly meant that the Mustang was not available for the disastrous Schweinfurt Raid on October 14.

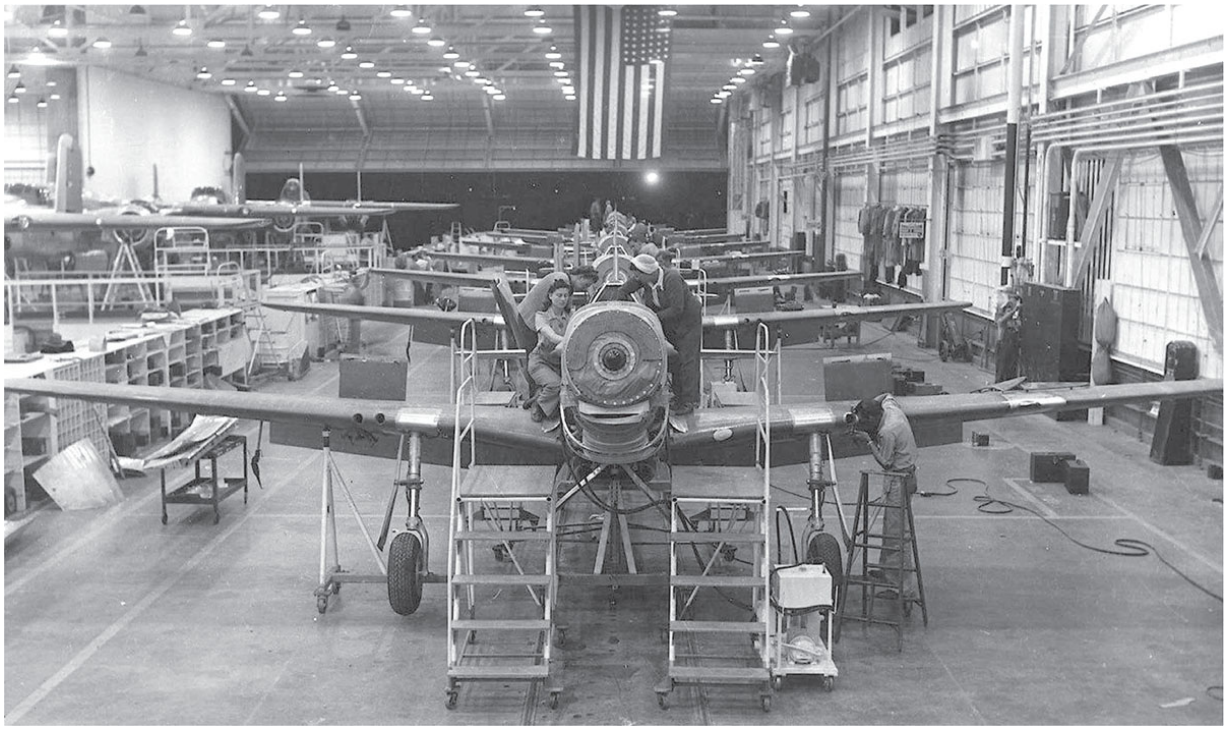
Flaws

The P-51B's advantages of range, speed, and maneuverability were the keys to its success, but upon its arrival in-theater, the Merlin Mustang was cutting-edge technology, and it came with all the issues that entails. Untried concepts and newly invented systems often needed fine-tuning amid the crucible of combat, and frequently the price paid for the discovery of these technical issues was the life of an American airman. Some of these flaws were endemic to fighter aircraft of the era – for example, oxygen system failures, which would claim the lives of dozens of unsuspecting fighter pilots throughout the war. Even when the oxygen system worked, the initial P-51Bs lacked storage capacity for missions beyond four hours and had to be augmented by additional oxygen tanks.

Aviators were also lost as a result of training deficiencies or inattention, such as the relatively frequent phenomena of new pilots attempting aerobatics in P-51Bs with the fuselage fuel tank installed and filled, which often resulted in a loss of control, spins, and fatal accidents. One such accident struck the 354th FG on March 11, 1944, when new pilot 2Lt Stewart Jones made a practice dive-bombing run on the Holbrook Bay range northeast of Boxted. Maj James Goodson of the 4th FG was in the area at the time, and he saw four 354th FG Mustangs at 10,000ft.

"At approximately 7,000ft, the rear P-51 started to roll, and a large piece was seen to come off," Goodson later recalled. "The aircraft then lost a wing and began spinning. Pieces and the other wing came off, and the various parts crashed into the water close to a small boat. The pilot did not get out. The spray of petrol and small pieces when the wings came off almost gave the impression that the ship had blown up, but I do not believe that to be the case.

It seemed that the tail coming off (or possibly a wing) started the uncontrolled roll and subsequent spin which resulted in disintegration."



Workers fit out P-51Bs on the assembly line at NAA's Inglewood plant. Note the B-25 Mitchells under final construction at left. Had the P-51B not gone into production, the tooling for the fighter would have been placed in storage and the plant given over in its entirety to the construction of more B-25s. (National Museum of the USAF)

A full fuselage tank, while a necessity for long-range penetration missions into Germany, also shifted the P-51B's center of gravity and made abrupt maneuvers – like nosing over into a sudden dive – potentially deadly. To make matters worse, the initial fuselage tanks fitted to early Mustangs lacked baffle bulkheads, which could minimize the effect of fuel shifting from side to side and back to front. "Pilots should be given extra time to become accustomed to the handling qualities of airplanes with full fuselage tanks before engaging in tight turns or similar maneuvers," a report from the Proof Department, Army Air Forces Proving Ground Command at Eglin Field, Florida, recommended.

The report advised that "missions must be so planned that the fuselage tank will not contain more than 40 gallons at the point where the pilot has a reasonable expectation of engaging in combat." It also recommended a specific

sequence of fuel usage, starting with 20 gallons from the fuselage tank for warm-up, take off, and climb; all fuel in external tanks, expended in cruise toward destination; 30 more gallons from the fuselage tank, used in cruise; main wing tanks, for combat and return to base; and the remainder of the fuselage tank used as a reserve. These recommendations were put to use in the field, and resulted in most pilots making the transition to the Mustang with a healthy wariness that helped them through their initial flights.

Other issues with the early B-models were more integral to the aircraft and had to be solved in the field (with fixes then being relayed to NAA for implementation on the assembly line for later machines). These included faulty engine mounts, with just such a failure resulting in the death of 1Lt Mack Tyner, a flight leader in the 354th FG's 356th FS. Known to his squadronmates as "Moe," Tyner was flying combat-expired P-51B-1 43-12437 *My Pet* on March 11, 1944 – the same day as 2Lt Jones' accident – on an indoctrination flight to familiarize new pilots with the terrain around the group's base when four P-47s executed a playful bounce on the Mustangs from "four o'clock."

2Lt Charles Simonsen, one of the new pilots, called in the bounce, and told Tyner to break right into the Thunderbolts. As Tyner broke, "his engine severed at the firewall, and the engine and spinning prop went under my nose," Simonsen recalled. The disabled Mustang fell into a flat spin at 5,000ft and crashed in a field, where the aircraft burned. Tyner was killed.

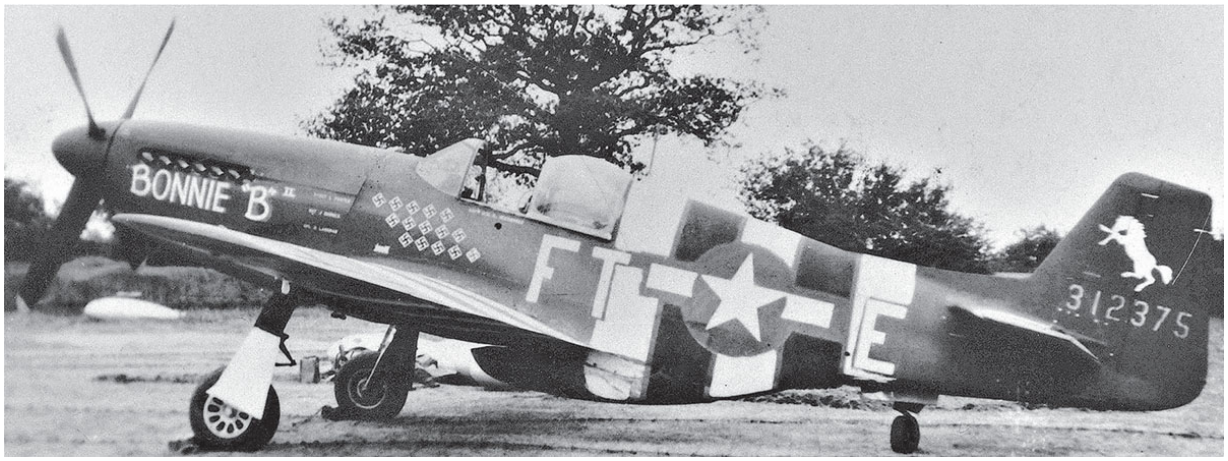
1Lt Mack Tyner (a flight leader in the 356th FS/354th FG with 3.5 victories to his credit) lost his life on March 11, 1944 when combat-expired P-51B-1 43-12437 *My Pet* lost its engine during a training mission and crashed. A subsequent investigation of the wreckage revealed that the cause of the catastrophic failure was a set of locally-sourced replacement bolts, intended to remedy problems associated with the too-brittle factory-installed bolts that were used to attach the Merlin to the engine mounts. (USAAF)

The cause of the accident – not the first of its type – was found to be a failure of the engine mounts, and specifically the high-tensile strength bolts used to attach the Merlin engine to the mounts. Initial investigation pointed to improper heat treatment of the bolts, and during the period in which the Mustang fleet was grounded, all these bolts were inspected, tested, and eventually discarded in favor of locally sourced bolts that had been properly heat-treated. When these accidents continued – Tyner's, for example – the failed bolts were found to be deficient in their metallurgy. They lacked sufficient nickel to provide the tensile strength needed, and all Mustang engine mount bolts were inspected again and replaced if necessary. At NAA, the flaw was traced to a single contractor, which revised its alloy mix while the company instituted a more rigorous test protocol.

Several early Mustangs were also lost or badly damaged as a result of empennage failures after performing slow aileron rolls. Often, it was one of the horizontal stabilizers that was compromised. The problem was submitted by

the USAAF to NACA-Ames, the research facility having demonstrated earlier through flight testing that the Mustang had unsatisfactory directional characteristics, including a reversal of rudder force at large angles of sideslip. In a high-speed rolling pullout, the researchers concluded, adverse aileron yaw could produce sufficient sideslip to cause a snap roll and impose large enough stresses to instigate a failure of the horizontal tail.

The USAAF response to this conclusion was to request a fix that could be implemented simply enough to keep P-51B manufacturing at pace and allow the Mustang to remain in combat, while also alleviating at least part of the problem. NACA-Ames tested 13 possible solutions, and recommended a three-part fix: the fitting of a fillet to the fin to improve air flow over the empennage during sideslips, strengthening of the elevator support structure with trailing edge bulges, and the addition of a reverse rudder anti-boost tab. NAA began introducing these changes on the assembly line and shipping kits to frontline units to allow modifications to be made to Mustangs already in combat. The kits ended the empennage failures.



P-51B-1 43-12375 *BONNIE "B" II* of the 353rd FS/354th FG was assigned to Capt Don Beerbower. The aircraft is fitted with a Malcolm Hood and dorsal fin fillet (developed by NAA to improve lateral stability and avoid empennage failures), and has had full D-Day stripes applied. Beerbower, who claimed all of his 15.5 aerial victories in the P-51B, died in captivity on August 9, 1944, several hours after falling to flak in this aircraft whilst strafing Épernay airfield, in France. (Author's Collection)

Small failures could have massive effects on the aircraft. One of the most insidious of these in the Mustang's case involved the wheel covers, which

blanked off the tires and wheels when the gear was retracted. Testing showed an occasional tendency for the wheel covers to be forced open in high-G pullouts, which then allowed the gear to drop out into the very high-velocity airflow. Another flaw revealed in combat was the failure of the door fairing latches, which allowed the doors to drop open. This in turn caused an instantaneous change in pressure distribution across the wing surface. Either event proved catastrophic at high speeds, causing a change in yaw and roll so severe that the wing itself could become compromised and depart the aircraft.

Revised door up-lock kits were fabricated and sent to the ETO by the end of April 1944, and the wheel door fairing latches were redesigned and dispatched to frontline units in July. Even so, it was not unheard of for Mustangs to shed wings in combat, with the 357th FG losing two aircraft and their pilots in September 1944 to such failures while dogfighting.

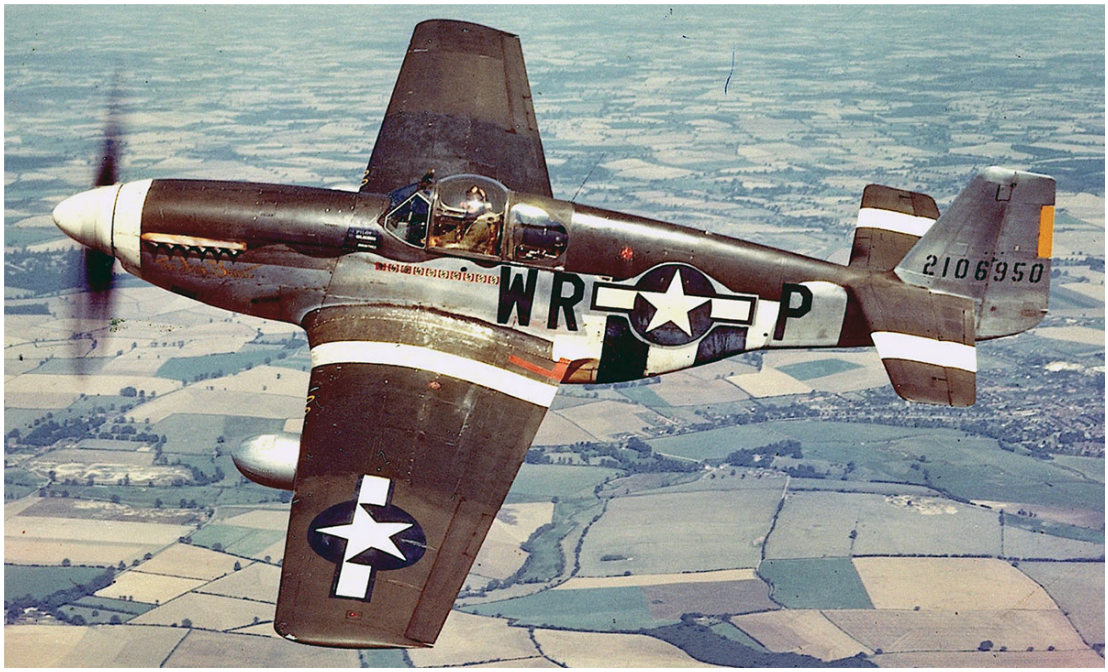
Many Mustang pilots during early missions experienced the infuriating nuisance of the propeller shedding oil. This occurred most often when the aircraft was flown at high speed for an extended period, and that oil naturally deposited itself upon the windscreen, obscuring vision.

The Packard Merlins were at first less efficient than the Rolls-Royce-manufactured engines, owing to changes made to the design to make them easier to produce. Maintainers discovered that the spark plugs on the Packard Merlins needed to be changed after just a few hours of use. This was caused by the cold, damp air over Europe, the high altitude at which the Mustangs operated, the fuel the aircraft were using, and the reduced power setting required for the Mustangs to maximize their range to and from targets. The problem was never completely solved, although Mustang fixers soon found that British spark plugs lasted longer, and thus they became a coveted commodity among fighter groups.

The P-51B's cockpit was enclosed by a canopy of a conventional design for its time – a windscreen forward, thumbnail-shaped quarterlight panels at the back to provide some rearward visibility, and a multi-pane canopy that was opened at the top, allowing the left side to fold down flat against the fuselage. The design included three vertical and four horizontal frames, causing some pilots to complain about visibility from the cockpit.

To solve this issue, American units turned to the same solution the RAF was using to improve visibility for its Mustang III – a blown hood designed by NAA and manufactured in Britain by R. Malcolm Company Ltd., which already had experience making clear blown hoods for P-47Ds. The Americans acquired these in small batches and fitted them to Mustangs in all the fighter groups in operation in early 1944. The hood offered three significant advantages: it provided the pilot with vastly superior all-around vision, including to the rear; it made it slightly easier to bail out of the Mustang in the event of trouble; and for pilots who were taller than average, it afforded enough extra headroom to offer greater comfort on long missions.

These were the major airframe problems facing Mustang units in the first half of 1944, and they were exacerbated by a series of lesser nagging issues such as a shortage of spare parts, leaking cooling systems, insufficient windscreen heating that led to frosted canopies, and engineering equipment that was designed for the P-47 – groundcrews often fabricated engine stands, dollies and wing and fuselage jacks from materials they scrounged on site. But they also did the important work of creating drawings of needed apparatus so that soon there was a flow of purpose-built maintenance equipment coming to Mustang units via USAAF Service Command.



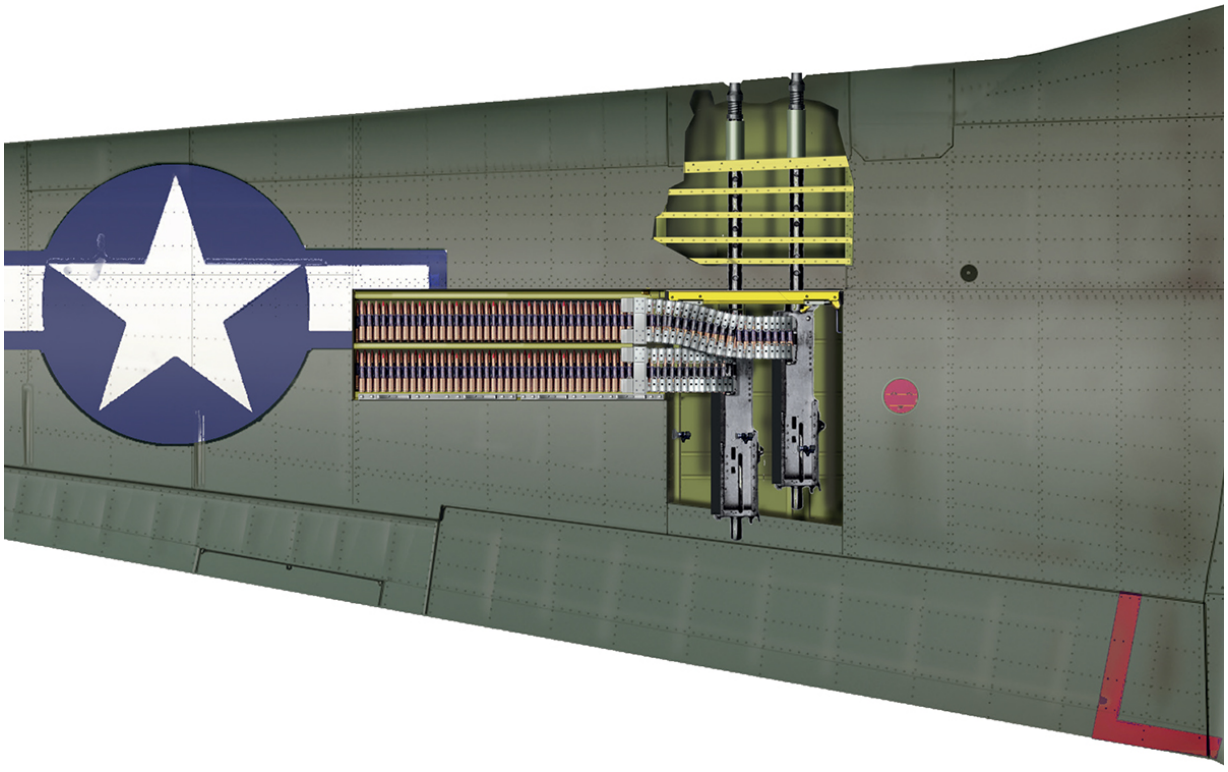
1Lt Lee Mendenhall of the 354th FS/355th FG slowtimes the Packard Merlin in P-51B-10 42-106950 *The Iowa Beaut*. Fitted with a Malcolm Hood, this aircraft was lost in action on September 11, 1944 when it was shot down by flak during a bomber escort mission to Magdeburg. Its pilot, 1Lt Kevin G. Rafferty, was killed. (Author's Collection)

Armament

The Allison-powered Mustangs were equipped with a variety of armament combinations according to the uses NAA's customers envisioned for the aircraft and their evolving philosophies about fighter armament. The Mustang I, in keeping with the RAF's desire for eight-gun fighters, mounted six 0.30-cal. weapons in the wings and two 0.50-cal. Brownings under the engine cowling. The Mk IA swapped the machine gun armament for four 20mm cannon, as the RAF desired greater hitting power for its fighters following lessons learned during the Battle of Britain. USAAF-retained P-51s also boasted the 20mm armament. However, the USAAF was still indecisive about fighter-mounted cannon, and so the A-36 dive-bomber carried six 0.50-cal. machine guns, two below the cowling and two in each wing. The P-51A dispensed with the chin guns and carried four 0.50-cal. Browning machine guns, two in each wing – as would the P-51B.

The Browning AN/ M2 0.50-cal. "light barrel" machine gun was an adaptation of the company's M1919 weapon. Weighing 60lbs, and with a shorter 36-in. barrel than the weapon used by the infantry, the gun had a rate of fire of 750–850 rounds per minute, with a muzzle velocity of approximately 2,900ft per second. The projectile was 2.31-in. long and weighed 1.6oz.

The Mustang's problems lie not with its weaponry but with the genesis of the gun mount designs. As debate continued over the best weapon for fighters, NAA decided to short-circuit the discussion by creating weapon mounts and ammunition feed systems for the Mustang's wings that could accommodate 0.50-cal. machine guns or 20mm cannon. First installed in the A-36, the gun mounts were canted so that the weapons rested at an angle within the wing. This was necessary so that 20mm cannon could fit in the wings with sufficient room for the ammunition belts to pass over the outboard weapons to reach the inboard cannon.



P-51B/C MUSTANG ARMAMENT

The two Browning M2 0.50-cal. machine guns in each wing of the P-51B were fitted at an angle – an artifact of the installation NAA used to address the conflicting requirements of the RAF and USAAF. The angle made room for the ammunition feeds for the 20mm cannon mounted in the RAF's Mustang IA. When 0.50-cal. guns were installed in these same mounts, this arrangement required the ammunition feeds to make a bend to enter the gun's receivers. In combat, under G-loads, this bend often led to ammunition misfeeds. G-forces could result in spent casings becoming jammed in the ejection chutes, also causing misfeeds.

The ammunition feeding problems were solved in the field with the fitment of small servo motors that had splines to feed ammunition into the receiver and to expel the spent casings. The inboard guns were furnished with 250 rounds each, while the outboard weapons had 350 rounds.

In the P-51B, the angled guns meant the ammunition belts had to make a sharp turn on the way to the weapons' receivers. If the Mustang was flying straight and level, this was no problem. However, in high-G maneuvers – like in aerial combat – the added force on the ammunition belts frequently caused them to jam.

"The ammunition belts, and the trays in which the ammunition belts lay, were positioned outboard along the wing," said 356th FS/354th FG pilot 1Lt Bob Welden in an interview with historian Steve Blake. "The belts had to feed over the tops of the gun breeches. Before feeding into the guns, however, each belt had to make a sharp inboard turn. Empty shell casings were ejected outboard. The feeding path of the ammunition belts resulted in a whole bunch of problems. When engagements occurred and deflection shooting was required – where you had to pull three or four Gs to get the gunsight on an enemy airplane – the ammunition belt crimped where it crossed the gun breech. This pulled the bullet linkages apart, so that many times the guns would not fire."

The barrels of the 0.50-cal. machine guns on Capt Don Gentile's P-51B *Shangri-La* are swabbed out by Sgt Leif, one of the 4th FG's armorers. Although care was lavished on the Browning M2 machine guns, it was not enough to alleviate ammunition jamming issues. The latter could only be solved by field expedients, and such modifications were subsequently applied by NAA to later-build P-51B/Cs on the assembly line. (NARA)

1Lt Bob Welden of the 356th FS/354th FG poses with his assigned P-51B-1 43-12172 *MACKIE THE 3rd* (which he named after his wife) at Lashenden on 1 May 1944. Like most early P-51B/C pilots in the ETO, Welden experienced gun jams on a number of occasions during his tour in the frontline. (USAAF)

High-G manuevers could also affect the 18lb expulsion force that threw the empty casing out of the ejection chute, which would also stop the gun from firing. In addition, the 0.50-cal. weapons were fitted with gun heaters that initially required the pilots to turn them on before they reached the target area – something that aviators often forgot to do.

The combination of flaws in the armament system became a major morale problem for the pilots. Numerous "sure thing" victories were lost, like Capt Glenn Eagleston's would-be Me 410 kill. Even one jam affected performance, for firing an out-of-balance set of weapons caused the aircraft to yaw into the jammed machine gun. Instead of a focused burst, pilots found themselves spraying a section of sky.

Problems continued until the ingenious mechanics of the Mustang groups found solutions fashioned in the field. One trick was a booster motor that used a ratchet to toss the expended cases out of the aircraft, the motor being attached to a microswitch that worked from the pressure created by the aircraft's movements. VIII Fighter Command's 461st Service Squadron and

tactical depots in southern England manufactured 200 sets of these motor/switch combinations, fixing that particular problem. Gun heaters were re-engineered to remain on for the duration of the mission. Ammunition feeding problems were fixed by the 421st Service Squadron, which invented a system that used a servo motor from a B-26 Marauder's Martin Amplidyne Turret with splines to feed ammunition into the breeches.

Ultimately, these issues would be resolved in the P-51D, whose six guns were mounted flat inside the wing, with no angle and none of the problems that troubled the P-51B's armament.

CHAPTER 5
ART OF WAR

The Nazi leadership had long played down the vulnerability of the Reich to air attack. As late as 1942, Generaloberst Hans Jeschonnek, the Luftwaffe chief of staff, begged the *Führer* and *Reichsmarschall* Hermann Göring to beef up air defenses over Germany based on reports from the air attaché to the German embassy in Washington, D.C.; Göring reassured the *Führer* that the B-17 was a low-quality machine, and the only things the Americans could produce effectively were refrigerators. "We no longer have any time to provide ourselves with the weapons to fight the dreadful threat which you have predicted and reported to us," Jeschonnek wrote to Generalleutnant Friedrich von Boetticher, the air attaché. "We will be covered from the air with an enemy screen which will paralyze our power to resist."

The USAAF itself reinforced the attitude of the German leadership with its poor performance in late 1942 and early 1943 during raids on France and the Low Countries. Luftwaffe production was still tilted in favor of bombers at

that point, as the threat posed by the USAAF's daylight bombing campaign was seen as negligible. Even when the P-47 began appearing over the German frontier in February 1943, Göring dismissed it as an "inferior fighter."

But USAAF heavy bomber raids quickly gained in effectiveness during the spring and summer of 1943, and Göring's public statements flip- flopped – fighters now took priority. At this stage, German defenses began to solidify, the establishment of a radar network covering northern France and the corridors to major German industrial centers providing advance warning of US raids that allowed Luftwaffe fighters to position themselves for effective interception.

During this period, the Luftwaffe also began fitting its fighters with heavy automatic cannons and W.Gr. 21 rockets in order to improve their effectiveness in downing the sturdy American four-engined bombers. With the P-47Ds unable to accompany the bombers all the way to the target, Bf 109s and Fw 190s would harry the bombers until the escort departed, then the heavily armed *Zerstörer* would move in, free from any fighter opposition, and use their "stand-off" weapons against the bombers. Next, the bombers would run a gauntlet of heavy flak in the target area, and then the survivors would face the German fighters again on the way home until reaching the cover of their escort.

To make things more difficult, in November 1943, the Luftwaffe finally organized its air defenses in a coherent way, spurred on by the arrival of external tank-equipped P-47Ds and P-38s on the German frontier. The new structure had five air divisions:

- 1. *Jagd Division* covered the Netherlands and northern Germany.
- 2. *Jagd Division* would defend Denmark and north- central Germany.
- 3. *Jagd Division* would protect Germany along the French border into western Belgium.
- 4. *Jagd Division* was responsible for the Berlin area.
- 5. *Jagd Division* covered central and southern Germany.

Oberst Walter Grabmann, commander of 3. *Jagd Division*, suggested some tactics that were adopted across the entire Luftwaffe. First, the Bf 109 *Gruppen* were to be tasked with engaging the escorting American fighters. Two *Gruppen*

should launch ahead of the main interception force to disperse the USAAF fighter escort. The Fw 190 *Sturmgruppen* would then be directed to attack once the escort had been repelled. Two additions to these dicta were added by Generaloberst Hubert Weise, commander of 2. *Jagd Division*: the *Zerstörer* Bf 110 and Ju 88s would only attack if the American escort had been dispersed, and the *Zerstörer* could attack at will once the bombers exceeded the range of their escorts.

Lt Gen "Jimmy" Doolittle brought a new, more aggressive ethos to the Eighth Air Force when he took command in January 1944. Instead of viewing fighters as an instrument to screen the bombers, he ordered the fighters to hunt the Luftwaffe in the air and on the ground, even if it meant increased bomber losses in the short term. Doolittle's primary objective in the spring of 1944 was the degradation of the Luftwaffe before the invasion of France. (USAAF)

USAAF Response

The USAAF's Commanding General, Gen Henry H. "Hap" Arnold, ordered Lt Gen James "Jimmy" Doolittle to replace Lt Gen Ira Eaker as commander of the Eighth Air Force in January 1944. Doolittle, who had led the Fifteenth Air Force in the Mediterranean Theater of Operations from November 1943, had gained fame as the planner and commander of the daring B-25 Mitchell raid on Tokyo from the carrier USS *Hornet* (CV-8) in April 1942.

Arnold had issued a message at the end of 1943 asserting that the Eighth Air Force's primary mission was to "destroy the enemy air force wherever you find him – in the air, on the ground, and in the factories." Doolittle took this aggressive stance a step further. Upon visiting VIII Fighter Command HQ for the first time, he ordered that the motto "Protect the Bombers" painted on its walls be changed to "Destroy the Luftwaffe in the Air and On the Ground." The fighters would be turned loose.

The arrival of the P-51B enabled the USAAF to extend its already effective fighter tactics deep into Germany. A group comprised three squadrons, and each squadron would launch four flights of four fighters for a total of 48 aircraft, plus spares. Any mechanical aborts would be replaced by the spares before entering the combat area. Each fighter group was assigned to cover a portion of the bomber's journey to the target in a relay fashion, giving the Mustang pilots the ability to conserve fuel on the way to their stage of the escort so as to maximize their available fuel in case of combat. For the P-51B pilots in theater in late 1943–early 1944, that meant conserving fuel almost all the way to the target so they could cover the critically important last segment of the bombers' approach.

For the Luftwaffe, the arrival of the Mustangs made its multi-layered attack plan obsolete. Now, there was no point along the bombers' route to the target that was free of escorting fighters. The Bf 109Gs charged with attacking the escort were hard-pressed to protect the heavy fighters, while at the same time trying to pull the escort away from the bombers so the *Zerstörer* could get a shot in.

The initial Mustang deep-penetration missions revealed how surprised the Luftwaffe was by their appearance. On December 30, 1943, the 354th FG provided withdrawal support for a strike on Ludwigshafen, and near the target the group spotted a pair of Do 217s above the bombers, starting an attack. Two flights of P-51Bs were dispatched to deal with the Dorniers, and they shot them both up, one being classified as damaged and the other a probable shared by 1Lts Don Beerbower and Carl Lind.

Each advance in the fuel capacity of the P-47 had forced the twin-engined fighters to reduce the area in which they could intercept the bombers without

the presence of American fighters. With the arrival of the Mustang, those safe operational areas vanished entirely.

The failure of this strategy was exacerbated by the quality of the average Luftwaffe pilot in 1944. Planning for a short war, the Luftwaffe did not make a concerted attempt to accelerate its pilot training program until 1941. By then, scaling-up operations was difficult because so many resources were required in the east. As the war dragged on, fuel for training operations became harder and harder to come by, so students received fewer flight hours before they had to be pressed into combat. From 1942, students were graduated early in order to plug holes in operational requirements, and soon thereafter instructors began to receive orders to fighter units. As the war turned, the Luftwaffe started re-assigning bomber pilots from the *Kampfgeschwadern* to the fighter force.

Poor planning for a sustained pipeline of new aviation recruits was exacerbated by a culture within the Luftwaffe that saw fighter instruction during wartime as a low-status job. Unlike the USAAF, which often rotated aviators home into training roles to help transmit experience and expertise to neophyte pilots, Luftwaffe pilots saw orders to a training unit as a demotion. Indeed, such units were viewed as places to send pilots who were "flown out" and had been given an enforced break because of combat fatigue (or what we know now as post-traumatic stress disorder). As a result, the Luftwaffe's top pilots amassed triple-digit scores, but this "fly-till-you- die" thinking meant that many of the lessons learned so dearly in combat against the Allies were taken to the grave by veteran pilots, and had to be re-learned in hazardous skies by newcomers.

Tactics

From December 1943 through to March 1944, the Luftwaffe could at least position its aircraft optimally in advance of attacking USAAF bomber formations based on early warning from its extensive radar network. The Bf 109Gs and Fw 190s attempted to gain an altitude advantage, while the twin-engined fighters sought positions at the same altitude as the bomber stream, hoping to find a break between formations that would allow them to set up a massed attack. During this phase of the air war, the Mustangs' role was as close

escort for the bombers. They were positioned along the flanks of the bomber stream, often 2,000ft above the "heavies," looking for trouble.

The Luftwaffe realized that putting a *Gruppe* of mostly newly graduated young pilots in an even fight against a squadron of Mustangs was a bad idea, so action frequently started when two or four Bf 109s would dive on the bomber stream, making a single pass before diving for the deck. These vertical attacks were only occasionally fatal to the bombers, but they had the effect of drawing P-51Bs into a diving pursuit, pulling them away from the bomber stream and luring them to low altitude, from where it would be difficult to rejoin the fight.

Another approach saw two or four German fighters fly parallel to the Mustangs, but at a distance, hoping to draw some attention. If P-51Bs went for them, they would dive for the deck. As an understanding of these tactics grew within the USAAF, a section or flight of Mustangs might be sent after these attackers, while the rest of the P-51B pilots held their positions. In the event that a significant number of Mustangs went for the bait, the Fw 190s and heavy fighters could take advantage of the break in coverage to attack the bombers – a dangerous proposition.

A group of ex-RCAF pilots who joined the 354th FG in late 1943 conduct a briefing at Boxted. They were all involved in the early escort missions to Germany, where the group took a heavy toll of defending *Zerstörer*. The pilots are, from left to right, 1Lts Jerry Leach, B. F. Durham, Bart Tenore, L. W. Cocker, R. T. Stolzle, James Dalglish, and J. W. Edwards. Dalglish was the most successful of these pilots in terms of aerial victories, finishing the war with nine kills – five of them in the P-51B. (USAAF)

Another German tactic was to fight in numbers and seek opportunities to overwhelm individual flights and sections of fighters. This tactic was an effective way to employ the younger pilots in the German fighter force – engage Mustangs and, if the lead attackers missed, hope that other fighters in the gaggle would be in a position to box in the P-51Bs and find an opportunity for a shot. The downside for the Germans was that the Mustang's speed and ability to reduce its turning radius through the use of flaps while at speed made it a difficult target to fight when the pilot was aware he was being pursued. Once a turning fight began, the sheer number of American fighters in the air on a mission meant help for the Mustangs under attack could arrive at any moment, including when the young *Jagdflieger* were themselves in a

vulnerable position, fixated on elusive targets, engaged in a turning fight, and low on energy.

A common attack for the Luftwaffe flyers would involve a bounce, a shot at the enemy target, followed by a dive toward the deck. The "split-S" was commonly employed as an escape tactic (with fatal consequences for numerous young pilots, who initiated the maneuver too low). Diving for the deck was a common tactic for the Bf 109 and Bf 110, and it was a particularly smart defensive move for the Fw 190, because it returned the Focke-Wulf to the lower altitudes where its radial engine performed best.

The *Jagdflieger* also tried to make use of the Lufbery Circle to provide mutual support and to take advantage of the Bf 109G's turning abilities, but this tactic required discipline. When German fighter pilots panicked and broke from the circle, they became easy prey for their foes.

Starting in mid-March 1944, Doolittle approved a change in tactics. Units could now send a flight or even a squadron ahead of the bombers, or to known Luftwaffe fighter bases, to pounce on aircraft as they formed up and engage them long before they could intercept the bombers. This proved disruptive for the young aviators in single-engined fighters. For the twin-engined fighters, this completely erased their ability to use the W.Gr. 21 effectively, since it depended on formation attacks to achieve the desired results.

Furthermore, Arnold's admonition to "destroy the Luftwaffe in the air and on the ground" took the form of encouragement to strafe enemy airfields on the way home from missions, and that often meant the destruction of the *Zerstörer* on the ground. As a result, the Bf 110G was withdrawn from combat over Germany in April 1944, followed by the Ju 88 and Do 217, then the Me 410 and, eventually, even the *Sturmböcke* Fw 190s. The very weaponry that made them threats to the bombers made these aircraft vulnerable to the Mustangs, and the Bf 109Gs and the inexperienced crews who needed to protect them long enough to employ those heavy weapons were simply not capable of carrying out that task.

By June 1944, the Luftwaffe fighter force's slow, steady collapse had rapidly accelerated, leaving the Allies with air supremacy over the Third Reich.

CHAPTER 6
COMBAT

The Mustang was fast, aerodynamically clean, and had clear advantages over its opponents in speed at medium to high altitudes, as well as in its rate of climb and when accelerating and diving. In the hands of a skilled pilot, the Bf 109G/K could out-turn the P-51B, but the average Luftwaffe *Jagdflieger* in 1944 was not an expert. The combination of better training and the Mustang's ability to use flaps in combat gave the USAAF fighter a practical advantage when turning.

Comparing the fighters on the basic numbers reveals the Mustang's overall superiority when engaging its German counterparts. At 25,000ft, the Mustang had a top speed of 437mph – 25mph faster than the Fw 190A-6 at 20,000ft and 37mph faster than the Bf 109G-6 at 20,700ft. The Mustang's rate of climb was 4,380ft per second, versus 3,300ft for the Bf 109G-6 and just 2,363ft for the Fw 190A-6. The Mustang could also out-dive both of its rivals. These performance differences in the P-51B's favor came in spite of the German

fighters' advantage in horsepower over the early Packard Merlin engines installed in the P-51B. The V-1650-3 mounted in the P-51B-1 generated 1,400hp, and the V-1650-7 introduced with the P-51B-10 had an output of 1,450hp. The Bf 109G-6's DB 605A cranked out 1,455hp, while the Fw 190A-6's BMW 801D-2 produced 1,677hp. The dramatic difference in speed versus horsepower is a testament to the P-51B's aerodynamic advantages – the result of nearly five years of research that the Bf 109's designers never saw.

The Mustang also had the advantage of being flown by pilots with hundreds of flying hours who were often led by flight leaders that had combat experience before strapping into the P-51B.

Capt Don Beerbower of the 353rd FS/354th FG poses in his P-51B-1 43-12375 *BONNIE "B" II*, which was retrofitted with the fuselage tank for greater range. He participated in most of the group's early missions, drawing first blood by claiming a half-share in a Do 217 probably destroyed on December 30, 1943. (USAAF)

Just the same, there was only one fighter group equipped with the P-51B at the start of what the USAAF called Operation *Argument* – the 354th FG. *Argument* – colloquially known as "Big Week" – was a six-day offensive between February 20–25, 1944, specifically intended to draw the Luftwaffe into the sky, where it could be destroyed. The cost to the USAAF was high – out of 6,000 sorties flown, 357 bombers, 28 fighters, and more than 2,000 men were lost in order to destroy 262 fighters. Some 250 German airmen also lost their lives. Instructions from Lt Gen Doolittle to the pilots of VIII Fighter Command called for them to take bombers to their targets, then on their way

home hunt down German fighters wherever they could be found. The only Mustangs involved in these missions were those of the "Pioneer Mustang Group," the 354th FG.

Day one of "Big Week" saw the 354th in action over Leipzig, and they were credited with 15 destroyed. Capts Don Beerbower (two destroyed) and Jack Bradley (one destroyed) both attained ace status. The next day (21st), the 354th was assigned target penetration and withdrawal duties for the "heavies" hitting Brunswick. Beerbower, a flight leader with the 353rd FS, spotted an Fw 190 stooging around below the bombers, looking for an opportunity to attack. He peeled off, and fully exploiting the Merlin Mustang's excellent diving abilities, quickly closed to within 200 yards. "I fired several short bursts, observing flashes near the cockpit," Beerbower reported. "Before I could close for more effective shots, the enemy aircraft dived into a thin cloud deck at 18,000ft. The enemy aircraft seemed to slow up after I fired and before going into the cloud deck."

With one damaged aircraft to his credit already, Beerbower climbed back up to altitude and re-formed his flight. About 15 minutes later, another member of the squadron spotted Mustangs chasing a twin-engined aircraft about 6,000ft below them. As the aircraft, identified as a Ju 88, started to smoke and drop away into a dive, the wingman in Beerbower's second section made a half-roll and dove after the stricken Junkers. This Mustang and its quarry disappeared into the clouds, with Beerbower following to the top of the undercast. He was then distracted by German fighters popping in and out of the cloud cover. The wingman was reported as missing in action, and later confirmed as killed in action – testimony to the danger of breaking formation in the hostile skies over the Reich.

Beerbower's remaining three fighters stayed on the lookout, and they were rewarded 15 minutes later by the sight of eight Bf 110s in the vicinity of Hildesheim heading for two boxes of bombers just exiting the target area. The ace later reported, "I settled below them and dead astern of the right section of the four. As I closed to 300 yards, two of the enemy aircraft dived for the deck. I closed to within 200 yards of the enemy aircraft on the right and fired several short bursts. The left engine exploded and smoke poured out of the right engine. The canopy flew off and a large section of empennage broke up. I

passed over the left wing within 20ft of the enemy aircraft and saw the pilot slumped over in the cockpit."

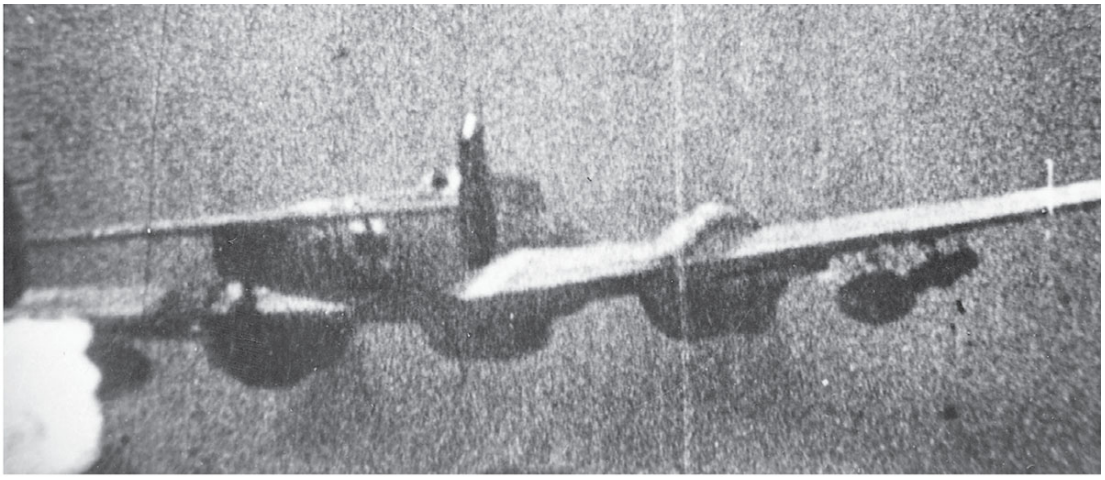
His hair still a mess after having worn his flying helmet for more than three hours, Californian 2Lt Don McDowell of the 353rd FS/354th FG enjoys a cup of coffee and a doughnut in the squadron operations hut soon after completing a bomber escort mission to Brunswick on February 21, 1944. He is grinning because his claim for three fighters (two Bf 109s and a Bf 110) destroyed had just been confirmed. (USAAF)

As Beerbower pulled up and circled whilst re-forming his flight, he saw the Bf 110 "skid crazily and flip up on one wing, going into a vertical dive out of control."

Also in Beerbower's flight was 2Lt Don McDowell, who picked out a Bf 110 and went after it. "As I closed, the enemy aircraft began a slow turn to the left and the rear gunner opened fire, scoring strikes on my oil scoop, coolant, and wing," McDowell reported. "I pulled through my lead in a slight bank and fired several short bursts, striking flashes all over the fuselage. I saw the left engine explode and begin smoking badly." The Bf 110 suddenly "split-essed" for the deck, and McDowell latched onto its tail, headed straight down. "I fired several more short bursts and knocked the right engine out. There was an explosion in the cockpit, and the canopy flew off and went over my right wing. I broke off at 15,000ft and pulled up to the left to clear my tail." McDowell last saw the Bf 110 spinning down, aflame, and he spotted two parachutes open before climbing back up to rejoin Beerbower. 1Lt Glenn Eagleston, who was cheated out of a Bf 110 victory in December by jammed guns, shot down a third *Zerstörer*.

McDowell's day was not done yet. As the flight hurried back to the "heavies," they spotted four Bf 109s completing a pass through the bomber formation. Beerbower by now had only one gun firing, but he damaged a Bf 109 and left the fighter smoking. As its pilot and his wingman turned to the right, the remaining two Bf 109s continued flying straight and level. McDowell closed in, and with all four guns still working, fired a three- second burst into the Bf 109 to the right. "The enemy aircraft burst into flames and started smoking," McDowell reported. "There was so much smoke pouring from the enemy aircraft I couldn't see him, and as I was afraid I was going to ram him, I fired another short burst point-blank and pulled off to the right."

Now the second Bf 109 broke to the left, and McDowell swung in on his tail, chasing him through two full turns in an effort to get him into his sights. While turning, he saw the pilot of the first Bf 109 bail out and witnessed the aircraft hit the ground. The enemy he was chasing suddenly straightened out, allowing McDowell to close in from astern and below. "I fired a short burst from 20 yards and saw hits all over the fuselage. The enemy aircraft exploded, throwing oil all over my canopy. I popped the stick forward to avoid hitting the flying pieces. I pulled up, trying to find him, and all I could see were smoking pieces going down." McDowell had expended just 534 rounds in scoring his three victories. He would eventually run his tally to 8.5 prior to being posted missing in action on May 28, 1944.



This Bf 110G *Pulkzerstörer* was the first victory credited to future six-kill ace Capt Warren Emerson of the 355th FS/ 354th FG, the aircraft being downed west of Kiel on January 5, 1944. The gun camera film revealed how close he got to his foe, this frame capturing the moment the Messerschmitt's port external fuel tank erupted after being hit by 0.50-cal. rounds. (USAAF)

2Lt Ralph "Kidd" Hofer of the 334th FS/4th FG laughs with his crew at Debden before a mission after strapping into a P-51B – not his own *Salem Representative*, which was unpainted metal and featured a Malcolm Hood, but an olive drab Mustang. Note the British-style rearview mirror on top of the windscreen. Hofer would be credited with 15 aerial victories in the P-51B prior to being killed in action. (National Museum of the USAF)

This mission was emblematic of the five trips the 354th FG made to Germany during "Big Week." Over the course of the weeklong battle, the 353rd scored 42 confirmed victories at the cost of three Mustangs. Thus, the only P-51B group involved in the campaign accounted for 16 percent of the enemy aircraft destroyed – a major achievement that portended what was to come for both the Eighth Air Force and the Luftwaffe.

For the 354th's last two missions of "Big Week," its commander, Lt Col Jim Howard, was not available to fly with his group. He was occupied leading the first Mustang missions of the 363rd FG, which entered combat on February 24, 1944. The 363rd would undergo an interesting evolution during its time in the ETO. It would operate as part of the Ninth Air Force but under Eighth Air Force control, much like the 354th FG, and in September 1944 it would

become the 363rd Tactical Reconnaissance Group, flying the F-6 armed photo-reconnaissance variant of the P-51D.

By the end of "Big Week," the Mustang was beginning to emerge as an iconic weapon of war, and naturally some of the pilots who flew it soon became iconic themselves. One of the most indelible characters during this period was 22-year-old Ralph Hofer of the 4th FG's 334th FS. An irrepressible, mischievous youth, Hofer flew missions wearing a football jersey and drove his superior officers crazy by disobeying orders. If not for the fact that he kept destroying German fighters, "Kid" Hofer would have been shipped to another unit.

On April 8, 1944, the 4th was at 27,000ft southwest of Bremen on what was termed a general support mission to Ulzen-Brunswick when the group ran into a large formation of roughly 85 German fighters. 335th FS ace 1Lt Pierce McKennon struggled to provide an exact number post-mission, stating "I cannot give a very coherent description because it's the first fight like it I've ever been in. Fw 190s were all over the place, and every time I turned around I started shooting." He was credited with one Focke-Wulf destroyed and a second damaged.

Despite his lowly rank of flight officer, Hofer, who had joined the RCAF in July 1941, was flying as the second section lead in the lead flight of the 334th FS. "We were at 27,000ft when we spotted 14+ enemy aircraft at 25,000ft in a 'V' formation heading southwest toward the bombers. We bounced and caught them just as they reached the 'Big Friends'." Hofer saw Capt Howard Moulton shoot down a Bf 109, and he then tagged onto his own Messerschmitt, but lost it after a brief chase. Hofer followed a third Bf 109 up toward the bombers, then pursued it through the formation, ignoring the gunfire from the mass of B-17s. Hofer had to break away to avoid hitting a bomber, however. "I broke up into 30+ Fw 190s, scattering them in a head-on attack," he reported matter-of-factly.

Hofer quickly jumped another Bf 109, which rolled over and dived for the deck from 24,000ft. "As I developed a terrific rate of speed, my [instrument] panel blew out and my radio antenna snapped off.

1345 hrs APRIL 24, 1944

SOUTHEAST OF MUNICH, NEAR ROGOERSDORF

1 The 355th FG, escorting four wings of B-17s to Munich, hear frantic calls for help from one of the bomber boxes. 1Lt Norman "Bud" Fortier of the 354th FS sees a formation of B-17s under attack, and his "Yellow" Flight, led by Capt Robert E. Woody, rushes to intercept. About 3,000 yards from the bombers, Woody spots five Bf 109s in line abreast formation flying at "one o'clock" to him making a pass at the bombers from their "eight o'clock" position.

2 Woody makes a slight left turn to position himself on the tail of the last Bf 109 in the string. Firing from 300 yards down to 200 yards, he scores hits all over the wing roots and fuselage. The German fighter shudders, starts smoking and then falls off on its right wing, plummeting straight down.

3 Amazingly, the remaining four German pilots do not break off their attack despite the demise of their compatriot. Woody moves in on the trailing Bf 109 as they close to within 1,200 yards of the bombers. Woody opens fire from 250 yards, hitting the cockpit and wing roots. The Bf 109 lazily falls off into a spin, trailing thick black smoke in its wake.

4 As yet another Bf 109 drops away, Woody engages the third fighter in the formation. Boring in to within 250 yards, he opens fire and scores hits on the cockpit and wing root. The Bf 109 streams coolant, and smoke pours from the left wing root. The enemy fighter rolls onto its back and falls out of formation.

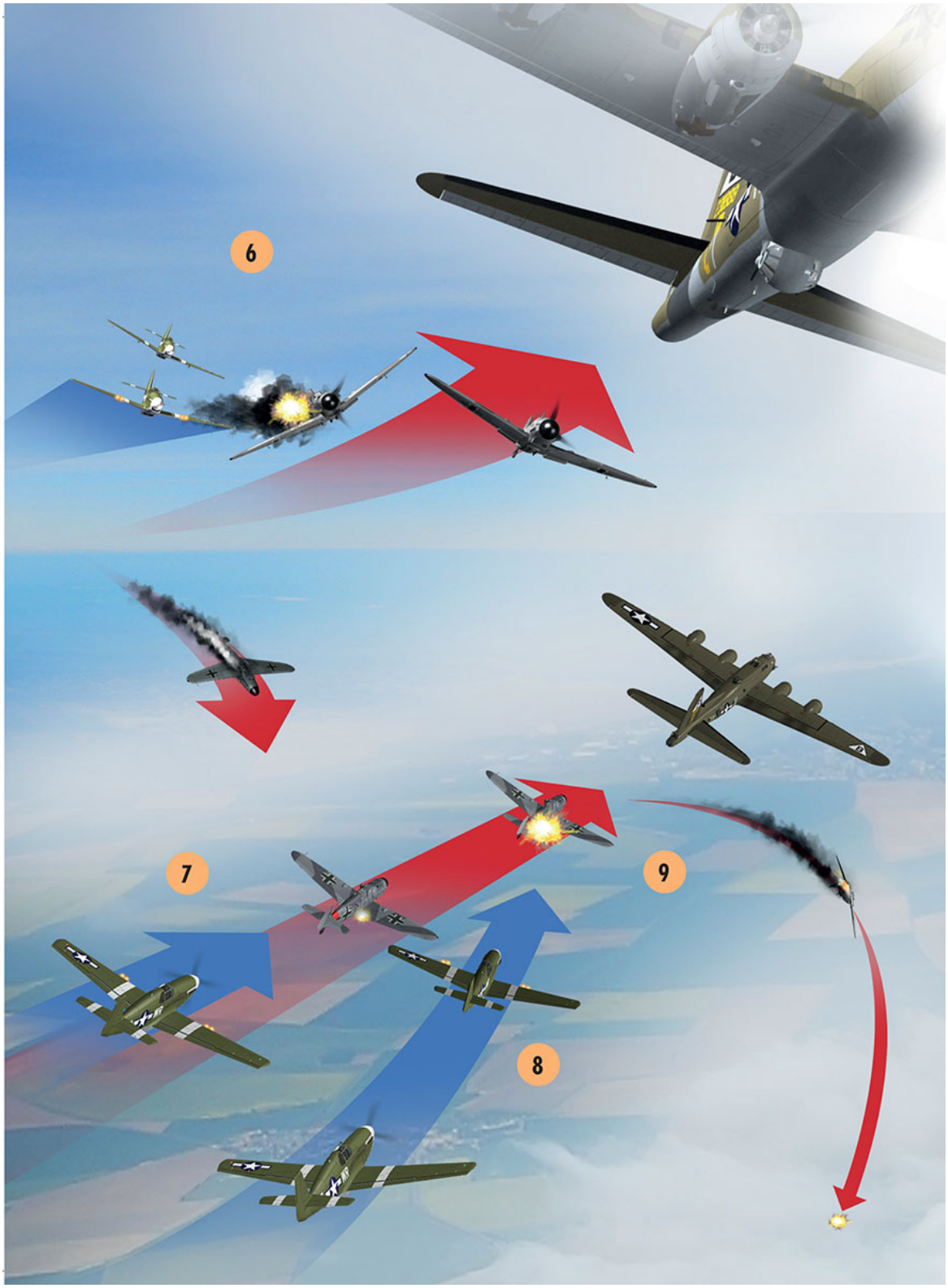
5 Now only 800 yards from the B-17s, Woody notices that the bomber gunners have stopped firing so as not to hit the chasing Mustangs. With the remaining two Bf 109 pilots intent on reaching the B-17s, Woody lines up on a fourth Messerschmitt and opens fire from 225 yards. Black smoke billows from the Bf 109 and coolant coats Woody's windscreen.

6 With the third Bf 109 falling to earth below him, Woody lines up on the fourth fighter and opens fire. Black smoke and coolant immediately explode back at Woody, again coating his windscreen.

7 Despite his visibility being ruined, Woody engages the lead Bf 109, which is now within firing range of the rear B-17.

8 At the same time, 1Lt William Boulet pulls alongside Woody and opens fire on the Bf 109, scoring hits all over its cockpits.

9 Hits "sparkle" all over the cockpit and the fighter drops away trailing thick smoke and crashes into the ground. Not one of the five Bf 109s was able to open fire on the bombers. The 355th FG would claim 20 enemy aircraft shot down on this day for the loss of four P-51s.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The 109 started whipping around in violent snaps. It shed the starboard wing when I started to recover." Hofer pulled out just above the treetops, and saw the Bf 109's flaming debris fluttering down to earth nearby. Then, keeping in character, Hofer orbited to photograph the wreckage, gave chase to an Fw 190 that led him to an airfield, and shot up a few buildings and the control tower before heading home alone. Hofer would tally 15 aerial victories (13 of them in a P-51B) before losing his life strafing an airfield near Mostar, Yugoslavia, in his final improvised, solo escapade. His high-speed maneuver victory on April 8 is evidence of the Mustang's impressive diving ability, and of the Mustang's light but rugged construction compared to the Bf 109.

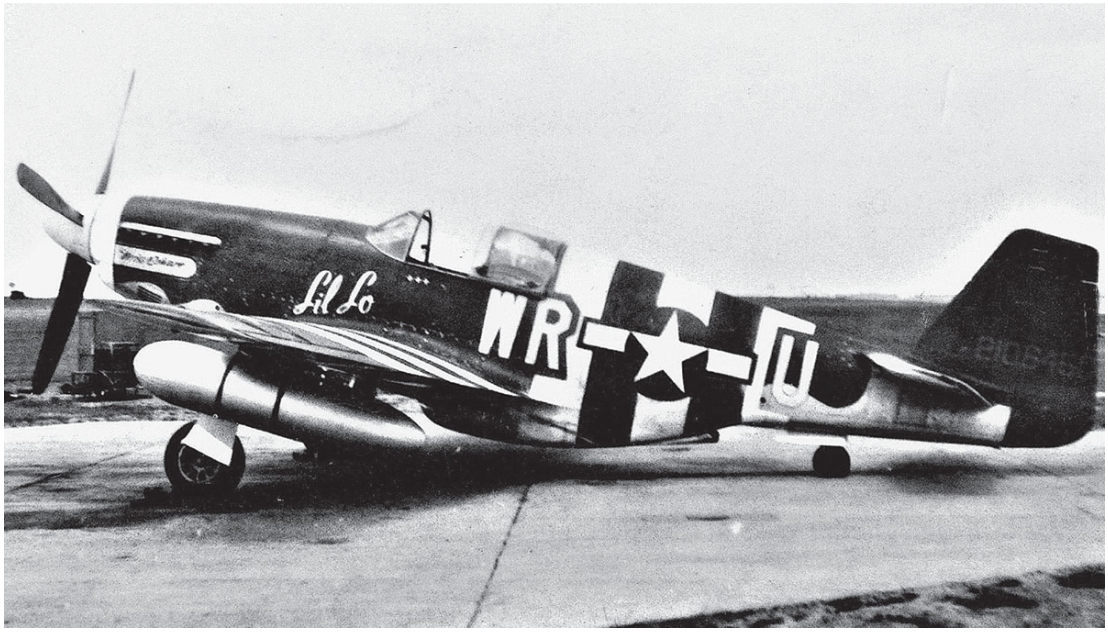
Capt Henry Kucheman of the 354th FS/355th FG experienced something similar during his mission on April 24, 1944. While leading the squadron on an escort near Munich, Kucheman rendezvoused with the bombers and was flying along the length of the stream when he switched his radio to the "C" channel and heard that the second box of aircraft was under attack. He signaled his squadron to attack, pushed the throttle forward and raced ahead. His flight split up to attack various groups of German fighters, while he took the lead flight up to 30,000ft in pursuit of 20 Bf 109s.

The quartet of Mustangs and the Bf 109s entered into a turning Lufbery Circle, out of firing range of each other, until the Messerschmitts started to become strung out. Two stragglers dropped behind the others by 1,000 yards, but Kucheman left those two for his No. 3 and went after the Bf 109 third-from-last in the massive Lufbery Circle. "I closed to about 300 yards, but my wingman called a break before I could open fire," Kucheman said. "I half-rolled, then with an Immelmann [turn] came up on the ships that were attacking us. The last man almost immediately headed straight down. We followed about 500 yards behind until we were at about 15,000ft. I was doing well over the 600[mph] mark when the ship I was following attempted to roll to the left, but his elevator pulled off first and finally his entire tail assembly tore off. He went into a violent spin without my ever having fired a shot."

His Bf 109 clearly headed for its destruction, Kucheman now had to avoid its fate. "I experienced a little difficulty in pulling out of this dive because my tail buffeted severely whenever I tried to ease it out," he reported. "I zoomed immediately back to about 25,000ft, climbing almost straight up."

Capt Henry Kucheman (right) and his crew celebrate his three- victory mission (note the freshly- applied swastikas below the cockpit) on April 24, 1944. He had destroyed three Bf 109s, including one that disintegrated during a high-speed diving chase. Kucheman, assigned to the 354th FS/355th FG, went on to score six victories (four in the air and two on the ground) during the course of 82 missions and 302 combat hours. (Author's Collection)

Amazingly, when Kucheman climbed back to altitude, the two other Mustangs from his flight still had the surviving Bf 109s "cornered" in the Lufbery Circle. When one of the Bf 109s closed for a shot on a Mustang, Kucheman fired a burst head-on, startling the pilot and sending him into a half-roll diving for the deck, out of the fight. "I then turned to the left and picked up three Me 109s just when they were making their run on the bombers," he said. "I was unable to prevent the Nos. 1 and 2 men from firing, but the No. 3 man attempted to turn into us. I closed to about 200 yards and fired several bursts. I saw many strikes from wingtip to wingtip. The plane caught fire, started to spin, and I overran. That was the last I saw of this ship. My wingman later told me the pilot bailed out."



P-51B-10 42-106450 *Lil Lo* of recently promoted Maj Henry Kucheman was photographed at Steeple Morden, in Cambridgeshire, in late June 1944 wearing its full D-Day regalia. Two months earlier, on April 24, Kucheman had destroyed three Bf 109s with this machine, including one that disintegrated during a high- speed diving chase. (Author's Collection)

Kucheman was not finished. Returning to 23,000ft, his wingman called in a fighter coming at them from "seven o'clock." "I half-rolled once more and came up just behind him, and we started a stall turn to the left," Kucheman noted in his after action report. "He finally spun and started to dive. I closed and fired a short burst, observing no strikes. We were in a push-over dive, and it was difficult to estimate the proper deflection." Kucheman fired and saw tracers – an indication he was low on ammunition. They undershot the target. He corrected his aim, fired again, and watched hits sparkle on the wing roots and tail. "Pieces flew off, and I pulled up into a loop to keep from ramming the enemy aircraft, for by this time I had closed to within 25 yards. My wingman told me this ship also caught fire."

The diving and climbing ability of the Mustang allowed its pilots to simply do more than their opponents were able to do. And while trials with captured aircraft found the Bf 109 to have a better turn rate than the P-51, it took skill to coax the maximum from the Messerschmitt. In combat the Mustang held

some unpleasant surprises for any German aviators expecting to defeat it in a horizontal dogfight.

On May 24, 1944, 1Lt Richard Whitelaw was flying wing to Maj Amos Scruggs, CO of the 339th FG's 503rd FS. The pair was escorting B-17s on the way home northwest of Berlin. Using six-tenths cloud cover to hide its approach, a single Fw 190 bounced the pair, firing a burst at Scruggs that scored a single hit on his wing. "I saw the enemy aircraft and called to Maj Scruggs to break left," Whitelaw reported. "He did so, and I turned inside [the Bf 109], getting on the tail of the fighter after 720 degrees of turning. Maj Scruggs dropped flaps and also got on his tail. We were both firing at the same time; pieces flew off the enemy aircraft, the pilot jettisoned his cockpit canopy, and the engine was streaming smoke. When last seen, the enemy aircraft was out of control in a vertical dive at 9,000ft."

During the same mission, the 4th FG was covering another part of the bomber stream. "We sighted about 20 Me 109s and Fw 190s at 30,000ft '12 o'clock' to the bombers and 5,000ft above us," said 1Lt Frank Speer of the 334th FS. "We climbed, and several Fw 190s broke away to come up behind us." Keeping an eye on the Fw 190s, Speer and his section stalked six Bf 109s that were in a gentle turn to the left. Climbing to their altitude, "we got fairly close to them and fired before they broke," said Speer. "I got strikes with the first burst and the enemy aircraft split-essed, with me on his tail. He went straight down, skidding, rolling, and taking violent evasive action. I kept firing short bursts and pieces were coming off all the time, two of which damaged my plane slightly."

The Bf 109 pilot entered an even steeper dive as he tried to escape. "I was directly above him, going straight down, when he seemed to hit compressibility. His plane was shuddering violently, and I had to put down 20 degrees of flaps to keep from overrunning him, indicating above 500mph. The enemy aircraft started to pull out, and in doing the same, I blacked out. When I came to, he was diving again, and I saw his canopy came off as he bailed out. The kite was last seen at about 9,000ft, going straight down, doing at least 500mph."

If the Mustang's turning ability was hard for a solitary enemy pilot to judge when making a bounce, it was even harder to anticipate in a swirling, multi-

aircraft dogfight like the one future ace Capt Walter Starck of the 487th FS/352nd FG found himself in on May 27, 1944. Leading a flight in an escort of the lead box of bombers, Starck was startled to see, seemingly out of nowhere, "the sky ahead filled with a huge glob of planes. They were Fw 190s and Me 109s, 100+.

"In a moment, we were right in the middle of them, and the fight started. We swung over to the right, and soon I and my wingman were alone in the middle of a Lufbery of 12 Me 109s, flying in three flights of four each. I reefed in hard all the while, and was actually making a smaller circle within the 109s. Whenever I started to get sights on one ship, I noticed a flight of 109s ready to come in on my wingman or myself, and so I had to break off. Finally, I saw a 109 break away and head due east. I tore out after him and stayed a little below so he would not see me, and thus give me a chance to close in on his tail and let him have it. We flew for about five minutes, throttle wide open, when the 109 pilot saw me and turned sharply to the left. I tried to cut him off but he turned the opposite way, and we were right back where we started."

In this heavily posed photograph, taken at Bodney, in Norfolk, in July 1944, Capt "Wally" Starck inspects belted 0.50-cal. ammunition with his groundcrew (from left to right), crew chief TSgt Keith Stevens and Sgts Robert McKinney and William McCurtain. They are standing in front of P-51B-15 43-24807 *STARCK MAD!*, which Starck used to claim two of his seven aerial victories. (USAAF)

Capt Clarence "Bud" Anderson of the 363rd FS/357th FG named all of his fighters *Old Crow*, with this particular aircraft being the third iteration after a P-39 Airacobra he used in training and an earlier P-51B-7. He claimed nine German fighters in the P-51B-15, with most of them being claimed in *OLD CROW* (III). (National Museum of the USAF)

The Bf 109 attempted to shake Starck with a series of violent maneuvers – he "broke down and made a sharp turn to the left, and then to the right," said Starck. "I swung my ship around, and as he turned to the right, I managed to get in to about 150 yards from him, measured off about 20 degrees deflection, and opened fire. Strikes showed up all over the cockpit in one brilliant mass, and the enemy aircraft caught fire and did a half-roll, before spinning slowly towards the earth, where it crashed in a burst of flames. The pilot did not get out – ever."

High-scoring Mustang ace Capt Clarence "Bud" Anderson of the 363rd FS/357th FG found the P-51B's turning ability helpful in ensuring that German fighters paid a steep price for hit-and-run attacks on the bomber stream, despite such tactics being specifically meant to limit their exposure to danger from American escorts.

On April 30, 1944, 30 miles southeast of Orleans, Anderson's section was already on its way home when they spotted a box of bombers under attack by a swarm of fighters. "I called Red Section and we went over at full throttle," Anderson reported. In response, six of the Fw 190s broke into the Mustangs, coming at them head-on. "Two broke down and the others turned right," said

Anderson. “By using 20 degrees of flap and full throttle, I pulled around onto the tail of the banking aircraft in a single turn and started firing – it must have scared the hell out of them, as they all hit the deck.

“I then picked out two together, and followed them, attacking the last man and getting three good bursts. He was smoking bad and pieces flew off. I then had to pull up as I was overrunning him. He straightened out and ran. I then rolled back and followed. As I closed again, a blue-nosed P-51 came in very steep and fast in front of me. He pulled up and out, the Fw 190 pulled up and the pilot bailed out. The ship crashed. I don’t know if the blue-nose even fired.”

Perched on the leading edge of P-51B-15 43-24823’s port wing, Capt “Bud” Anderson signals his score to his crew chief on May 30, 1944. Earlier that day, he had claimed a Bf 109 destroyed over Schönebeck. (Author’s Collection)

The Mustang’s ability to use its flaps allowed the aircraft to dramatically reduce its turning radius. The pilots who mastered the use of the flaps in combat found the feature very helpful. One such aviator was future 10.333-victory ace 1Lt Louis “Red Dog” Norley. He was flying in 1Lt Willard

Millikan's section of the 336th FS/4th FG on April 8, 1944 – the same mission that saw Ralph Hofer out-dive a Bf 109. Heading toward the front of a formation of B-24s, the pilots from the 336th heard a warning of 100+ enemy aircraft closing on the bombers from the northeast. The flight was on the right side of the lead box when they spotted a large formation of German fighters coming head-on. "They attacked and passed beneath the bombers," Norley said. "I saw many strikes on the attackers from the gunners in the Libs."

Millikan led the flight out in front of the B-24s, then they broke down on the enemy fighters. "Before I singled one out, I saw Lt Millikan fire from approximately 20 degrees and 30 yards and get some very good strikes on a 109, which spun down. I then bounced a single 190 that was 2,000ft below at 'seven o'clock'. I got on his tail and we dove down to about 3,000ft, where the 190 did a very tight climbing turn to port. I dropped 20 degrees of flaps and easily out-turned him. We completed the turn, the 190 rolled and dove steeply toward the deck. I closed from 300 to 50 yards, firing a couple of short bursts, and the Jerry bailed out just before I pulled out of the dive." Norley's fighter received a sudden shower of oil from the Fw 190 he had just finished off.

0930 hrs MAY 8, 1944

NEAR BRUNSWICK

1 Fifteen German fighters attack the bomber stream at 23,000ft, then dive for safety.

2 Capt Clayton O. Davis, leading "Red" Flight of the 487th FS/352nd FG, is waiting to rendezvous with the bombers outbound from Brunswick. Davis and his wingman, 1Lt

William Fowler, spot the fleeing fighters and dive after them as they "head for the deck."

3 One of the Bf 109 pilots breaks right and then left as he tries to turn into the Mustangs.

4 The maneuver fails, as Davis and Fowler make effective use of their flaps to turn inside the Bf 109 and get on its tail.

5 Fowler seizes his opportunity and fires at the Bf 109, but he misses.

6 As the tracer rounds streak past either side of his cockpit, the German pilot wings over and dives for safety – with Davis and Fowler close behind him.

7 Diving down to 5,000ft, Davis closes to within 150 yards of the Bf 109 and opens fire, registering hits. Burning, the Messerschmitt explodes and dives straight into the ground.

8 Climbing back up to 6,000ft, Davis and Fowler are bounced from "five o'clock high" by a lone Fw 190 carrying a belly tank.

9 Davis spots the enemy's fire and executes a barrel roll attack, causing the Fw 190 pilot to overshoot.

10 Davis' bold move puts the Fw 190 in his gunsight – but only briefly. He fires, registering a few hits, before overshooting.

11 The Fw 190 breaks right, into Fowler's path. He duly opens fire with a 20-degree deflection shot, hitting the Focke-Wulf with a two-second burst just as it straightens. The aircraft explodes while Fowler is still firing, the Fw 190 violently breaking away to the left and subsequently crashing into the ground. Davis would down two more Bf 109s during the mission, earning him the Distinguished Service Cross. The 352nd FG claimed 27 enemy shot down on May 8, 1944.

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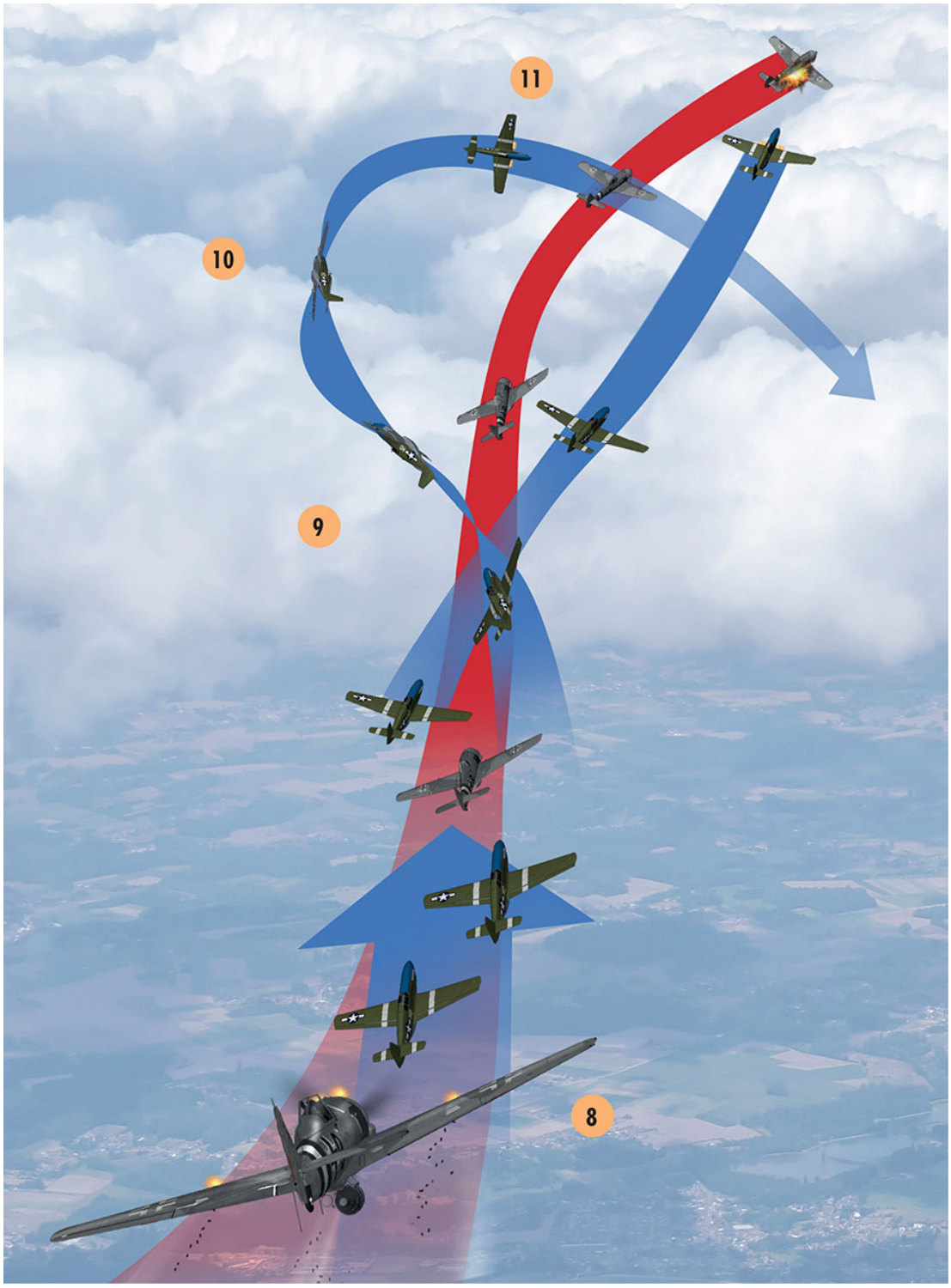


As he pulled up, he noticed another Fw 190 diving at his "six o'clock." "I got on his tail by simply turning onto him," Norley recalled. "I closed to about

100 yards after diving approximately 6,000ft, fired a good burst, and the saw the canopy fly off and the pilot bail out."

Norley broke up to the left again to regain altitude, cleared his tail and began climbing. At about 8,000ft, he spotted yet another Fw 190 diving down from a large gaggle at about 15,000ft. "The 190 didn't seem to be coming very fast – more like a glide. I turned into him, at first thinking he had perhaps been hit by one of the other 51s, but there was no smoke or any signs of damage, and he went into action immediately when he saw me. I turned into him as he went by. We turned though 360 degrees, during which time I got on his tail, but overshot him. I did a wing-over and hit him head-on. The 190 then rolled and went straight for the deck. We were at approximately 2,000ft. I followed, but could not depress my nose enough to get on him, so I pulled out as fast as I could, being very close to the deck. I blacked out. When I could see again I was at 4,000ft. I turned, expecting to see the 190 on my tail, but he had gone straight into the deck."

The P-51B gave the Eighth Air Force the ability to escort its heavy bombers deep into Germany, but it did so without sacrificing performance. It was tougher, faster, and turned more sharply than its opponents, and it was flown by highly competent, well-trained, and motivated pilots who had total confidence in the fighter. The aircraft's flaws were worked out in time to make it effective when it needed to be.

Pre-mission apprehension shows on the face of 1Lt Louis "Red Dog" Norley of the 4th FG's 336th FS in the early spring of 1944. He is seen here at Debden with crew chief TSgt Vincent Andra. As a lucky talisman, Norley (who was credited with 10.333 aerial victories, six of them in a P-51B) took to wearing a scarf made from an old parachute used by a fellow pilot who bailed out over the English Channel and was rescued. (USAAF)

AFTERMATH

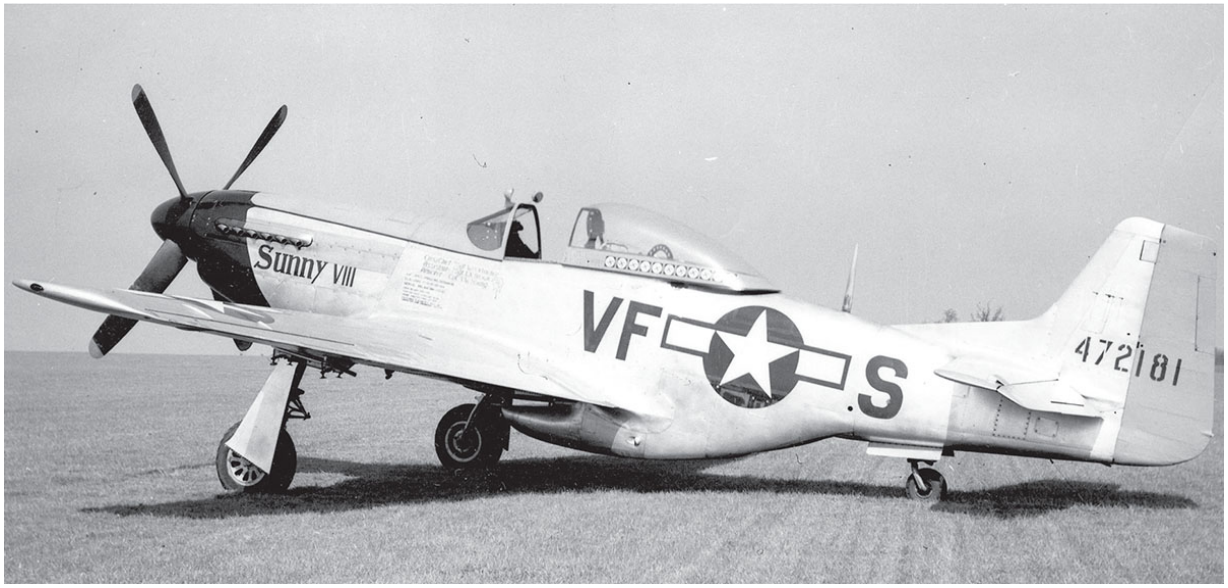
Even before the P-51B entered combat, a better iteration of the Mustang was making its first flights. In February 1943, NAA produced a document that outlined its initial vision for the D-model Mustang. Issues identified in testing – and subsequently put on full display in combat – were dealt with in the specification. The wheel wells and gear doors were redesigned, with a leading-edge extension at the wing root to accommodate them. The four-gun armament was upgraded to six guns, and their mounts would be perpendicular to the wing, eliminating the ammunition feed problems. The wing itself would be lowered by three inches and strengthened.

The P-51D's most distinctive features, the bubble canopy and cut-down rear fuselage, were not part of the original specification. The D-model was initially intended to have the same birdcage canopy as earlier Mustangs. Work on these features did not begin until July 1943, and were first applied to P-51B 42-12102, which proved the value of the arrangement, especially for rearward visibility.

The first P-51D was delivered to the USAAF in February 1944, and as production ramped up, deliveries to the ETO started around the time of D-Day. The D-model was warmly received. While the P-51B had a slightly faster top speed (441mph versus 437mph), the increased firepower and reliability and vastly improved visibility made a great aircraft even greater.

Although it was indeed greater, the D-model was still not perfect. The P-51D-5 was delivered without a tail fillet, and the combination of this and the cut-down rear fuselage made directional stability even more of a problem for the D-model than it had for the B-model. As with the P-51B/C, this was addressed by the fitting of fillet kits in the field. From the P-51D-10 on, the fillet was added at the factory.

A newly built P-51D is put through its paces by a NAA pilot prior to the fighter being delivered to the USAAF. The enlarged inboard wing leading edge extensions and new main landing gear fairing doors can be clearly seen from this angle. (Author's Collection)



P-51D-20 44-72181 *SUNNY VIII* of Col Everett Stewart, CO of the 4th FG, is typical of the late-war Mustangs flown by VIII Fighter Command units in the ETO. The aircraft has all of the modifications introduced by NAA when it developed the D-model Mustang, the most obvious of which are the bubble canopy, cutdown rear fuselage, and dorsal fin fillet – the latter was not initially fitted to the P-51D. Although Stewart claimed no aerial victories in this aircraft, he was credited with seven kills in the P-51B. (National Museum of the USAF)

The D-model's bubble canopy eliminated the braced canopy of the B-model, providing excellent visibility. The machine gun armament was increased to six, but they were mounted straight up-and- down in the wing, eliminating the kinks in the ammunition feed that had contributed to gun jamming in the winter and spring of 1944. The wing was strengthened and the leading edge was swept forward at the root slightly. As previously noted, the P-51D-5 suffered longitudinal instability issues from the cut-down rear fuselage, and the same fin fillet being retrofitted to P-51B/Cs in the field was eventually added to early P-51Ds. Starting with the P-51D-10, the fillet was fitted in the factory. A similar improvement was made to the elevators, which were the same fabric-covered units used on the P-51B. To overcome control stiffness caused by ballooning at high speeds, the fabric covering was replaced by metal in the P-51D-10.

At the same time, NAA's production rate grew significantly. As a result, by the end of 1944, six more USAAF Mustang groups were ranging across northern Europe, making 12 attached to the Eighth Air Force (the 354th

briefly switched to the P-47 in November–December). With arguably the finest fighter in the theater in overwhelming numbers, the USAAF made good on Gen "Hap" Arnold's order to destroy the Luftwaffe. Mustangs accounted for more than 6,000 German aircraft destroyed in the air and on the ground in just 18 months of combat.

The P-47 Thunderbolt had begun the destruction of the Luftwaffe, and the P-51D would complete the job. But without the P-51B, and the men who designed and flew it, the air war might well have been lost.

APPENDICES

P-51B/C Mustang Aces in the ETO

Score	Name	Fighter Group	Total Score	Notes
	(rank when flying P-51B/C)			
18.333	Capt Don Gentile	4th	21.833	2 in Spitfire, 3.333 in P-47
15.5	Capt Don Beerbower	354th	15.5	Killed In Action (KIA)
14	Maj Jack Bradley	354th	15	1 in P-51D
13.5	1Lt Glenn Eagleston	354th	20.5	5 in P-51D, 2 in F-86
13	2Lt Ralph Hofer	4th	15	2 in P-47, KIA
13	1Lt John Thornell	352nd	17.25	4.25 in P-47
12.833	Maj George Carpenter	4th	13.833	1 in P-47, Prisoner of War (PoW)
12.833	Capt Johnny Godfrey	4th	16.333	2.5 in P-47, 1 in P-51D, PoW
12.25	Capt Clarence Anderson	357th	16.25	4 in P-51D
11.833	Capt Nicholas Megura	4th	11.833	Interned Sweden
11	1Lt Carl Frantz	354th	11	
10.75	Capt Frank O'Connor	354th	0.75	PoW
10	Capt Howard Hively	4th	12	1 in P-47, 1 in P-51D
10	Capt Willard Millikan	4th	13	3 in P-47, PoW
10	Maj Robert Stephens	354th	13	3 in P-51D
10	Maj Richard Turner	354th	11	1 in P-51D
9.5	Capt Richard Peterson	357th	15.50	6 in P-51D
9	Capt Fletcher Adams	357th	9	KIA
9	1Lt Charles Anderson	4th	10	1 in P-47, KIA
9	1Lt Ken Dahlberg	354th	14	2 in P-51D, 3 in P-47
9	Maj James Goodson	4th	14	5 in P-47, PoW
8.5	Col Don Blakeslee	4th	14.5	3 in Spitfire, 3 in P-47
8.5	1Lt Carl Luksic	352nd	8.5	PoW
8.5	1Lt Don McDowell	354th	8.5	KIA
8.2	1Lt Henry Brown	355th	14.2	6 in P-51D, PoW
8	Capt Wallace Emmer	354th	14	6 in P-51D, PoW (died in captivity)

8	2Lt Dale Spencer	361st	9.5	1.5 in P-51D
7.833	Capt Don Bochkay	357th	13.833	6 in P-51D
7.5	Capt Bernard McGrattan	4th	8.5	1 in P-47, KIA
7.5	Capt Lowell Brueland	354th	14.5	5 in P-51D, 2 in F-86
7.5	Capt Glendon Davis	357th	7.5	Evaded
7.5	Capt John England	357th	17.5	10 in P-51D
7.5	Capt Charles Lasko	354th	7.5	
7.5	Capt Albert Schlegel	4th	8.5	1 in P-47, KIA
7.25	Capt Robert Goodnight	354th	7.25	
7	Maj Stephen Andrew	352nd	9	1 in P-47, 1 in P-40, PoW
7	1Lt John Carder	357th	7	PoW
7	1Lt Pierce McKennon	4th	11	3.5 in P-47, 0.5 in P-51D
7	1Lt Joseph Pierce	357th	7	KIA
7	1 Lt Robert Reynolds	357th	7	PoW
7	Capt Mike Rogers	354th	7	
7	Lt Col Everett Stewart	355th	7.833	0.833 in P-47
7	Capt Robert Woody	355th	7	
6.5	Capt Robert Becker	357th	7	0.5 in P-51D
6.5	1Lt Edward Hunt	354th	6.5	KIA
6.25	1Lt Robert Welden	354th	6.25	
6	Maj Joseph Broadhead	357th	8	2 in P-51D
6	Capt Robert Foy	357th	15	9 in P-51D
6	1Lt Charles Gumm	354th	6	Killed in flying accident
6	Lt Col Thomas Hayes	357th	8.5	2.5 in P-51D
6	Col James Howard	354th	8.333	2.333 in P-40
6	1Lt Louis Norley	4th	10.333	1.333 in P-47, 3 in P-51D
6	1Lt Gilbert O'Brien	357th	7	1 in P-51D
6	Capt John Pugh	357th	6	
6	1Lt Paul Riley	4th	6.5	0.5 in P-47, PoW
6	1Lt William Simmons	354th	6	KIA
6	1Lt Gerald Tyler	357th	7	1 in P-51D
5.833	1Lt Joseph Lang	4th	7.833	2 in P-51D, KIA
5.833	Maj George Preddy	352nd	26.833	3 in P-47, 18 in P-51D, KIA
5.5	Capt Frank Cutler	352nd	7.5	2 in P-47, KIA
5.5	Capt Norman Fortier	355th	5.833	0.333 in P-47
5.5	1Lt William King	354th	5.5	

5.5	Lt Col John Meyer	352nd	26	3 in P-47, 15.5 in P-51D, 2 in F-86
5.5	Capt William O'Brien	357th	5.5	
5.5	1Lt LeRoy Ruder	357th	5.5	KIA
5.5	1Lt Robert Shoup	354th	5.5	PoW
5.333	Capt Duane Beeson	4th	17.333	12 in P-47, PoW
5.333	1Lt Fred Glover	4th	10.333	5 in P-51D
5.25	2Lt Thomas Miller	354th	5.25	PoW
5	Capt Jim Browning	357th	7	KIA
5	1Lt James Dalglish	354th/363rd	9	2 in P-47, 2 in P-51D
5	1Lt Chris Hanseman	339th	5	KIA
5	1Lt Thomas Harris	357th	5	PoW
5	Lt Col Clay Kinnard	355th	5	3 in P-51D
5	Col Kenneth Martin	354th	5	PoW
5	1Lt William Reese	57th	5	KIA
5	1Lt Robert Shaw	357th	8	3 in P-51D
5	1Lt Morris Stanley	357th	5	
5	1Lt Jim Starnes	339th	6	1 in P-51D
5	Capt Jack Warren	357th	5	KIA

ACKNOWLEDGMENTS

Thanks go to the many Mustang mavens I have known who have contributed to my knowledge of this remarkable, beautiful machine. Those people include Wade Meyers, Jack Cook, Peter Randall and his fantastic website www.littlefriends.co.uk, Tom Cleaver, and countless others. Thanks go to my friends Mick Burton and Mike Meek, who finagled me a ride in a P-51 that made me a Mustang lover for life. I am grateful to all the P-51 pilots who have been kind enough to tell me their stories – particularly Kelly Gross, Frank Gailer, and "Woodie" Spears – for their time and their trust. And, of course, thanks to my wife Elizabeth and my daughter Amelia, who endure my aviation obsession with patience and understanding.

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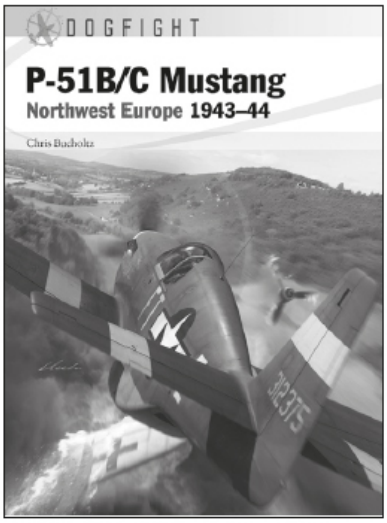

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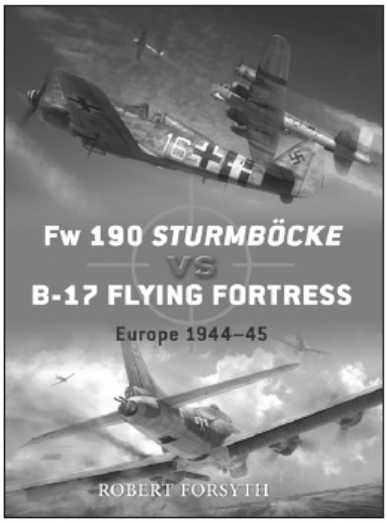

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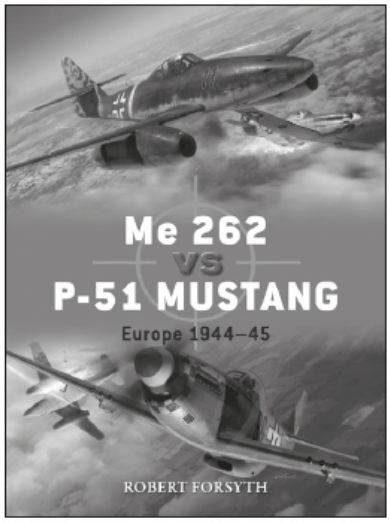

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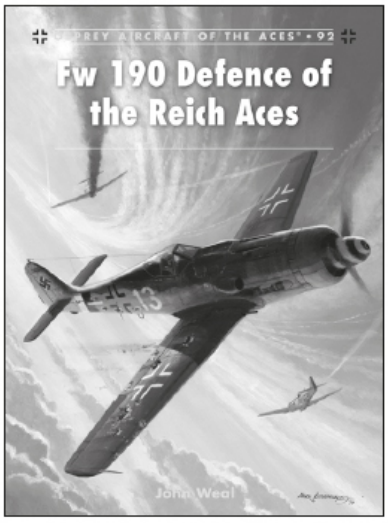

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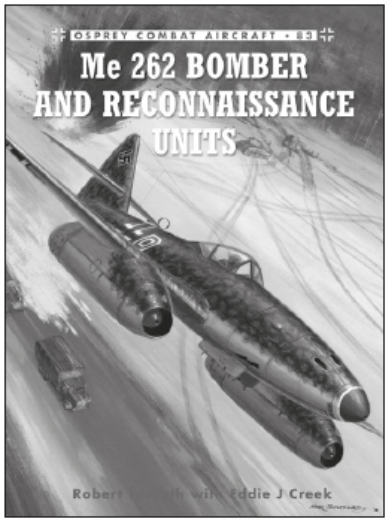

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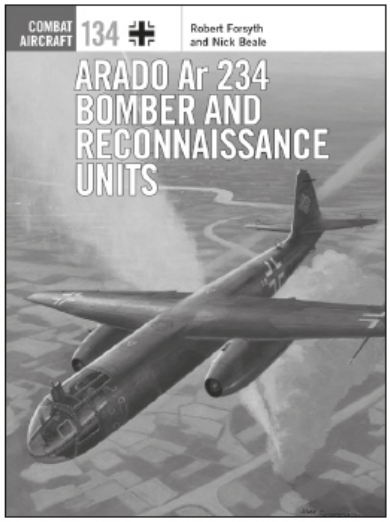

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Front Cover Artwork: On April 8, 1944, Mustang ace Capt Don Beerbower of the 353rd FS/354th FG was escorting bombers heading to Brunswick. He and his wingman, TSgt Dennis Johns, were below and in front of the bombers just north of the target when the first attack came from 75 single-engined fighters, many equipped with rockets. Johns was soon shot down, but Beerbower continued his pursuit of the enemy alone, downing an Fw 190.

By now far below where the fight had started, he spotted a Bf 109 being chased by squadronmate 2Lt Ed Regis. Beerbower, pulling out of a dive, raced past him to his left and closed to within 50 yards of the Bf 109. Although neither Mustang pilot fired, the unnerved and distracted German pilot hit a line of trees and crashed in a ball of flames (as depicted here) that rolled across a field. "I just pulled up in time myself," Beerbower later recalled. He then climbed back into the melee taking place above him and engaged an Fw 190 in a ten-minute dogfight, eventually getting on the tail of the German aircraft and sending it down after hitting the fighter in the engine with a burst of fire. The three victories from this mission raised Beerbower's score to 12.

Title Page: 1Lts Don Emerson and Robert Hughes, Capt Don Gentile and 1Lts Kendall Carlson and Don Patchen – all from the 4th FG's 336th FS – pose for the camera in front of 1Lt Johnny Godfrey's assigned aircraft, P-51B-5 43-6765, at Debden in mid-March 1944. (Author's Collection)